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The Australian Apple Review

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The Australian Apple Review

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EDITORIAL

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his issue is our fourth.

We have now settled into regular monthly publication and our advertising and circulation are both increasing steadily with each issue. Which means we must be doing something right.

Because we are an Apple magazine - although totally and absolutely independent - we are often in a position to know what is happening at Apple well in advance of public release. Indeed, sometimes we know what is happening in Cupertino before Apple executives in Australia. And sometimes we know before any of them. However, despite rumours to the contrary, we didn't know that the Lisa would be named the computer of the year and Zardax the software package of the year, we merely made an intelligent guess.

Quite correctly, Apple ask that we do not reveal all the goodies that are coming your way in advance of the release date. It would ruin their chances of obtaining publicity in other media.

But we think it is fair enough if we

say this:

From all the plans that we have seen at Apple, all the ideas that they have explained to us in great and careful detail, we have managed to gain a very clear insight into the future.

It is a future where the Apple will blossom as never before. Apple have got together a cohesive policy which will mean not just the survival of the company in one of the most competitive industries in the world of commerce, but the securing of a niche for itself where it will effectively be totally secure from the opposition.

For months we wondered whether Apple would follow everyone else in the headlong lemming rush into MS



DOS - an operating system that became an industry standard overnight. Apple are one of the few companies to have resisted that siren

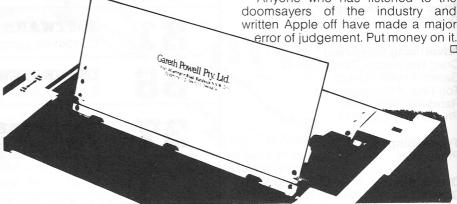
They have not attempted to say "Anything IBM do we can do cheaper"

Instead, they have stuck to their policy of producing two unique styles of machine (which for simplicity we will call Apple and Lisa) which cater for very well defined sectors of the marketplace.

For a time, we were among those who doubted the wisdom of Apple's decision in avoiding MS DOS. We now know that we were wrong. Many of the companies that followed the MS DOS trail will not survive to the end of this year.

In our next issue we will be able to be much more specific about one of the new developments at Apple. It is a totally new machine which, we truly believe, is going to set the industry back on its heels. So that you can understand the impact it made on us, we ordered the first one to come to Australia for our own personal use. And we paid with money. There's food for thought in that.

Anyone who has listened to the doomsayers of the industry and written Apple off have made a major error of judgement. Put money on it.



Colour your Apple rainbow the C.Itoh colour printer

by Duncan McCann

here is no doubt that in the very near future the day of the monochrome printer will be mast. They will then be as common as black and white tellies.

Leading the charge into the brave world of colour printers is C. Itoh arguably, make some of the finest dot matrix printers in the world.

may be, of course, that you do mot know of that company under that mame. But they make the printers for the Apple, and for Digital and we go on. They also are responsible for every printer in our company

Reliability

We have used C. Itoh printers for many years and, in our opinion, they me exactly what computer perisherals should be and rarely are elable, inexpensive and good-

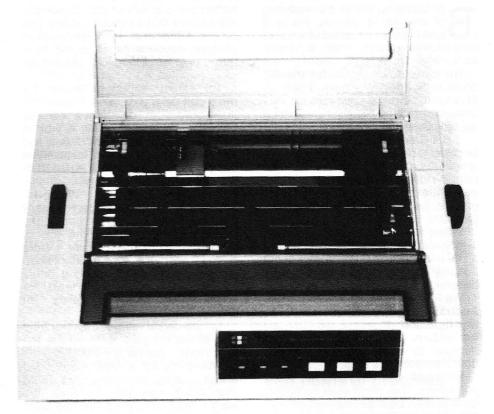
The new C. Itoh 8510 seven colour more was on show at the PC show errier this year, and visitors watched amazement the multi-colour pictures it produced.

And at 180 cps (roughly two and a maif lines per second) it is up there in the speedster class.

The printer is housed in an mactive off white case, with a fairly edangular shape and no rough The controls are mounted in a membrane on the front and a positive click to them when

The top is fitted with a multitude of allowing access to the more vital including the dip switches. se allow us to modify certain taracteristics of the printer, such as minute feed and the type character being used. These can also be modified through programming in the

When the main cover is lifted a switch makes printing cease and the unit is put off-line. To montinue printing, replace the lid and select. This is very useful for



making minor paper adjustments or changing the ribbon.

A large lever to the top left switches between friction and tractor feed. At the back you'll find the centronics connector and a removable panel for the optional RS-232 interface.

Paper feed

Tractor feed paper enters through a small slot in the rear and friction feed through the usual slot on the top. Very little noise escapes through these points, making printing a relatively quiet job.

The ribbon cassette on this version has three colours, a black and white version of the printer is also available.

The 8510 has a useful 2K buffer so that once the whole file is in the printers' temporary storage area you can continue working while it prints.

The print colour defaults to a pleasant blue in well formed 8 x 8 or 7 x 9 characters. It has plenty of print modes, from super and sub-script to bit-image colour graphics.

Everything you would ever want to vary is variable and there is also a draft print mode for extra speed and

less quality.

The manual is a direct translation



from Japanese. The information is all there, but it's very difficult to find even

during daylight hours.

Overall, it is highly reliable and walks all over most other printers for speed and quality. For the home user, a great colour graphics machine, easy to use and plenty of pace. Business people will love the colour for reports and the near letter quality print for letters.

Bill Gates – Software Supremo B. Gates Ihnen? Sehr gut, danke

Bill Gates is, within the meaning of the Act, a genius. He is a child of the computer revolution, which has made him a multimillionaire.

He came to Australia for the PC show in Sydney and gave a talk on Microsoft and its software at the University of New South Wales which was a masterpiece of lucidity.

If Bill Gates ever wished, he would become, beyond peradventure, a great educator. He looks and acts the part. He dresses in American sloppy collegiate style. He has floppy hair, glasses and a disconcertingly clear

When he is asked a question he listens carefully, pauses to consider all its aspects and then gives a fluent concise answer which is often disarmingly honest.

We interviewed him for **The Australian Apple Review** when he was here and, of course, we attended his lecture. (Do not take that word "lecture" to mean it was in any way dull. The reverse is true).

Microsoft are emerging as book publishers. They need seek no further for a certain best selling author than Bill Gates. He is a natural.

He was, and still is, intimately involved in the devlopment of the Apple Macintosh and his company has supported the project right from its inception. He waxes quite philosophical on the subject.

Major change

"The Apple Macintosh, together with Microsoft software, represents a major change in how people are going to view and interact with computer programs. The Macintosh is a blend of Apple's knowledge of what personal computing should be, what the semiconductor industry has made possible, and Microsoft's ability to get the most out of a computer. Microsoft expects the Macintosh to become very widely used and we are committed to being in the forefront of providing software that takes full advantage of all the

features and power of the Macintosh. We believe that as much as one half of our 1984 and 1985 application program revenue could come from the sales of Microsoft Macintosh programs".

The most important event for Microsoft this year, and indeed for many years to come, will be the launch of "Windows". This is not, in itself, a software program. It is a two part system. One part is installed in the computer, one part is installed in the software.

The two parts of "Windows" together supply a window capacity like Macintosh or Lisa to almost any program. Which makes the job of programming infinitely easier – there is no need to continually keep reinventing the wheel. And it offers the potential, at the very least, for some matching standards in software.

In the initial stage the machine part of the program will – unlike the Macintosh – not be in ROM.

"We're being a little more timid about putting programs into ROM than Apple was with the Mac. We want to wait until 'Windows' has been out nine months before we tell manufacturers to put it in ROM. We want to make sure that we picked exactly the right stuff."

Window workings

Bill Gates explains how "Windows" works. "The program developer gets a tool kit that includes a lot of utilities that help to describe their menus in an easy fashion, then converts them into compact efficient binary form.

"Windows' creates a virtual interface between the application and the screen. One of the goals of 'Windows' is that irrespective of screen or the output device being used the same application will run in the same way.

"Every programmer has to implement, say, drawing a circle. That's built into 'Windows'. You don't want programmers to have to reinvent the wheel.

"For example we've built in a



Bill Gates

number of print fonts as part of the 'Windows' package. These fonts may not be enough for some applications so in the 'Windows' development kit we have put a bunch of other fonts. If a programmer wants to use them, he takes them out of the developer's kit and put thems on the diskette with their application."

Rich library

"We put in a pretty rich set of things in 'Windows' itself, but we also came up with a few things people might want to do which we couldn't justify putting into the software in the machine – you don't want 'Windows' to get too big. So we put these it into a library as part of the developer's kit.

"We've got software divided into three pieces: the part that you can assume is in the machine, the stuff that we've made available in the developer's kit so that it only has to be written once, and finally the application specific stuff that the programmers develop."

With "Windows" Microsoft is offering software programmers the opportunity to conform to preset standards without feeling unduly

restricted. Microsoft, according to Gates, believe strongly in encouraging conformity to a set of standards, once those standards have been throughly tested in the real world.

Discussing this Bill Gates said, There will come cases where people consciously say to themselves, I won't use the standard way. That forces me to implement it all self, but it's worthwhile for my application.' Alternatively, if they're toing it the standard 'Windows' way just call up a sub-routine out of modws'. This an evolutionary way getting standards rather than arcing them on people.

Eventually, of course, we would the to see it in ROM. The beauty of the training it in ROM, is it is part of the

machine."

The Word

Recently, Microsoft launched in Astralia their word processing cogram "The Word" which is shortly be made available for the accintosh.

when we tested it we suggested its capabilities outstripped the capabilities of the machines which it was designed, including the Mac.

Gates did not disagree. "We had a choice. To produce a word processor that imitated a dedicated word processor or do something that was perhaps more innovative. We decided to take the latter approach.

"Other people have taken the approach of imitating the word processor, for example the 'Multimate' package."

In his lecture Bill Gates brought up the intriguing possibility of what

he referred to as "softer software".

With softer software, Gates said, "the fundamental idea is to record the way that the user uses the program. Keep that data – not every key stroke, but its functions and form. And then automatically the program will modify itself using that database to suit the specific user."

Laser technology

Finally, we talked to him about our current obsession – getting the microcomputer to link with a Laser printer and thus do away with the tedium of typesetting. In his talk he had stated that a laser printer could produce 200 dots per square inch under present technology and that the finest printing only used a thousand dots an inch.

What we couldn't get clear in our

mind is how a letter on the bit mapped screen of the Macintosh, looking as if it was constructed in a series of steps, especially in the larger point size display typefaces, could produce a nicely rounded and smooth type.

Bill Gates smartly disabused us of the idea that this was going to be a graphics dump. What you see on the screen is not what you will get from the printer. "The command says select this font, for example New York 72 point, and it says 'oh gee, let's go find the real New York 72 point font'. And then outputs that information to the printer. Not the image that is on the screen.

"We have these laser printers at work which are part of our network. All internal memos are done on the laser printer and it's super nice. People use fonts like crazy. Microsoft's use of typesetters has been cut by a factor of four. Our brochure and ad department still go to outside typesetters."

Bill Gates very much reminds us of an old country ballad with the lyrics "I know where I'm going, and I know who's coming with me".

He indeed knows where he is going.

States, Chairman of the Microsoft Corporation, with the managing director of the Australian operation, Linda Graham



The perils of progress

It isn't easy if you are at the cutting edge of the new technology. Everyone at Microsoft in the US has a microcomputer work station which are all interconnected. Electronic memos fly fast and furious. Which can mean a hold up when you are working on one project and find that curiosity impels you to read 23 memos your machine is holding in store for you – none of them important.

The biggest problem, according to Bill Gates, was that when the lights of one car in the carpark were left on, a memo was circulated to everyone about that car. Inefficient and time consuming. So now they have a database with every car registration number listed and any memo regarding that car can only be routed to the personal computer of the person owning the vehicle – and to no one else. We always knew there was a good reason for inventing data bases.

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Starting from scratch

f you have just started using an Apple you may find yourself slightly confused. Understandable, because there is almost a conspiracy in existence to make first time users memain ignorant of what goes on in their machines.

Even the Apple Users' Clubs tend to be meeting places of the initiated. Because all of us went through the same trauma that you are going brough, we thought a series spelling but the basics of computing would be no bad idea.

If you are already expert in programming and write neat sub-routines - Assembly this article is not for you. There are other articles in this issue more suited to your tastes.

But if you are not quite sure how a computer works, this article may be some assistance. Depending on the response, we may expand it in further issues.

Computers are all based on the same principles and are basically premy simple animals to understand.

is generally accepted that the the concept of the computer from Charles Babbage in 1834 when he outlined the principle of an Araytical Machine. Rumour has it the worked it out to help his mamorata, Augusta Ada, Countess of Lowelace, who was Ada to her friends and Lord Byron's half-sister, beat the

Electricity was not available and frere were problems with friction and so the machine never worked. But in concept this was acceptably the first computer. This computer, like every after computer that has followed, generated on its ability to tell the afference between "1" and "0" - and nathing else.

The first working computer arrived the Second World War and used in the United States to beak codes and work out the mectory of naval guns. These mouters worked with valves -those things your Dad used to mange in the family wireless. The echines were huge, used a memendous amount of electricity, and changing the valves as they burnt out was a full time job.

The computer started to become with the invention of the

transistor. The transistor - which also made the wireless portable - is an electric switching device invented primarily to make telephone exchanges easier and more reliable to use. It allows minute amounts of current to be switched on and off at great speed.

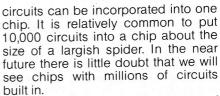
(If we want to start wandering into technical wilderness, we can discuss the fact that within a transistor differently treated surfaces can allow electric current to flow in specific directions, hence the term 'semi-conductor" - but enough is enough).

Chips

This invention enabled Ted Hoff of Intel to satisfy a Japanese customer who wanted a calculator which had a built-in series of circuits. Ted Hoff did this with three chips and thus effectively invented the modern micro-computer.

These chips, which are the whole key to personal computers, are now made out of silicon by heating sand. A rod of this super pure silicon is sliced, like salami, into wafer-thin about half a millimetre - disks. These disks are made photosensitive and the circuit is put on to the surface chip in much the same way that a photograph is printed in the darkroom - but on an infinitely smaller

Series of disks can be wired together so that a large number of



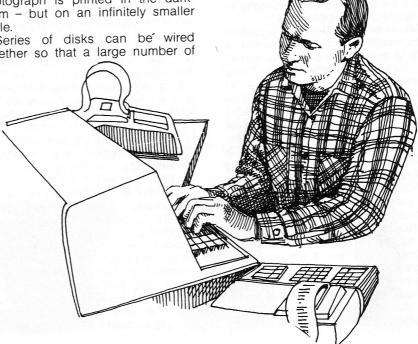
These chips are the heart of computing. Add a keyboard on at one end and a converted telly at the other and you have a computer. Add a cassette machine, or better still, a floppy disk drive, and you are in business.

although this computer comes about through the wonders of modern science, it must be clearly understood that the computer is still a stupid, if immensely fast and efficient, animal.

All it can understand is "0" or "1" nothing in between, no shades and

subtleties of meaning. "1" or "0".

In the Apple it is given the information for "1" through a 5 volt charge. "0" normally comes through as an absence of current. This is where the transistor comes because it can switch the current on and off with great rapidity, thus controlling a stream of information which is moving at amazingly high speed.



This "1" or "0" restriction could make writing a program for a computer a long and boring task. Take the case of numbers.

Almost anyone can count from 1 to 10 with ease. But a computer – even a computer as smart as the Apple II – cannot count in this way. It

only understands "1" or "0".

For the Apple, one is 00110001, two is 00110010, three is 00110011, four is 00110100, five is 00110101, six is 00110110, seven is 00110111, eight is 00111000, nine is 00111001 and ten is 00111010. Just try working out your telephone number with that little lot.

Languages

In the initial stages computers were indeed programmed in this cumbersome way, but very quickly languages were introduced (one of which is incidentally named Ada after the aforementioned Miss Lovelace and has been developed at the cost of two million dollars by the United States Defence Department) which allowed programs to be written much more easily.

These languages either converted the "0"s and "1"s into a hexadecimal number (machine code programming, difficult but very efficient) or into something approaching the English language like BASIC or Forth. Do not confuse these languages with Operating Systems (which we will come to in a minute), in the Apple called Apple DOS

the Apple called Apple DOS.

Personal computers (as opposed to business computers) started a decade ago with the introduction of the Altair and the Sol. These machines were the province of dedicated computer enthusiasts – frequently called "hackers" – who spoke to each other in incomprehensible jargon and were of necessity dab hands at wielding a

soldering iron.

Personal computers became accessible to the general public with the birth of the Apple (midwives Wozniak and Jobs). Here was a machine which would work straight out of the box. And would work whether you knew anything about programming or not. Although there have been many machines since this original design, it is still one of the all time classics and it is going to take a considerable amount of pressure to

ever get us to change.

In the years since, personal computing has gone quite mad with new machines popping up – and frequently popping down again just as fast – almost every other day of the week. The Apple remains constant.

None of this changes the way in which the computer works. Every piece of information that you feed it, every calculation that it makes, every answer that it gives you is made up from an original message combining "0" or "1" in thousands, millions, of

different permutations.

When you load a program from a disc or a cassette or when you type a message into the Apple's keyboard (which is exactly the same as the keyboard of a typewriter) that message is converted by an Interpreter built into the Apple into groups of "0"/"1" messages.

Operating System

These messages go into the Central Processing Unit, which acts upon them in strict accordance with a set of rules which have been programmed permanently into it called the Operating System. This Operating System may be exclusive to a family of computers, as in the case of Apple, or can be fairly wide spread, as in the case of MS DOS.

The results of its deliberations are then sent to the video screen where you can look at them, or to a printer (an electric typewriter in drag) which will show you the same result more or

less neatly typed out.

Where absolute beginners get confused is the jargon that is used by the cognoscenti. We are quite sure this is deliberately done to confuse and mislead the general public by hackers who want their hobby to remain mysterious.

Some definitions to help you.

The language the computer understands – all those "000"s and "111"s – is called "binary".

Eight of those numbers (which are individually called "bits") hang

together to become "bytes".

"VDU", "VDT", "CRT" - the terms seem to be interchangeable - stand for Visual Display Unit, Visual Display Terminal or Cathode Ray Tube. In every case they are referring to the modified television tube which shows you the end result. This is also sometimes called a "monitor". Monitors

made specially for the job are better than converted television sets.

Information storage

Perhaps the biggest area of confusion for beginners concerns the storage of information typed into the Apple. Where, they want to know, do Apples store the information typed in?

We know that programs can be loaded into the Apple - but where are

they stored?

We know that when we type in a basic BASIC program or a letter to our favourite aunt congratulating her on her fourth marriage or a letter to our bank manager complaining about the miserliness of our overdraft – the Apple must store it somewhere – but where?

Let us go back a step and remember that computers only accept instructions that are "1" or "0". "Yes" or "No". This means that for a fairly simple routine there are an awful lot of "1"s and "0"s running around loose.

When you type any information into an Apple it goes, in the first instance, into the Random Access Memory which is known as RAM. It would perhaps be better for everyone if they called it a Temporary Information Storage Space. Because that is exactly what it normally is.

Do not confuse it with ROM (Read Only Memory) which is a part of the memory that contains the permanent instructions to the Apple on how to

behave.

The Temporary Information Storage Space, the RAM, is Temporary because all the information you have typed in will disappear if you switch off the computer or press the reset button. Before you do that you have to shift the information from the RAM to a more permanent information storage centre which we will discuss in a moment.

(I don't want to confuse you, but there are two ways of making the Temporary Information Storing Centre into a Permanent Information Storage Centre.

A battery back-up built into the machine means, in effect, that you never switch off the memory. Look for something like this to be available on Apple before the end of this year.

The other way to achieve this is very cunning. You glue a hearing aid

battery on to the top of each RAM chip and wire it to the front two legs of the chip, disconnecting those two legs from the socket from which they normally get their power. This is quite a prevalent practice amongst the Apple computer hackers of Hong Kong.

It means that anything you type in the Apple stays in the Temporary Information Storage Space until you either run out of memory and overwrite it, or you tell the Apple to wipe the slate clean and start again. Expected life of the batteries is of the order of 120 years, using a mathematical formula based on the

power drain.)

This temporary storage area in the computer is measured in Ks. At the sk of arousing the wrath of all computer advertising copy writers, will state pedantically that this measurement does not exist in the But use has scientific sense. eatimised its existence. Like Topsy it just growed.

Furthermore, K does not mean

1,000. It means 1,024.

To understand why this is so you to look at a small, painless piece of mathematics.

The decimal system that we use is convenient if you are counting on fingers and toes, because ten is

the normal allotment.

But 10 is basically a rotten number and we never fancied Bo Derek anyway) because it will only divide by 125 and 10.8 or 16 are much easier numbers for a computer to manipulate because it only has two esponses, "1" or "0". These two responses are called Binary.

An example. As 1K is 1,024 you andivide it by 2 continuously. It spes 512 to 256 to 128 to 64 to 32 to to 8 to 4 to 2. It is a number misable by 32, 16, 8 and 4 which is

extremely useful.

wou start with 1,000 you get 500 to 250 to 125 to 62.5 to 32.25 to 16.125 and on into the realms of complicated numbers with lots of figures after the decimal point.

Hexadecimal (using 16 as a base instead of 10) is altogether easier to manipulate if your starting number is two, binary, "1" or "0".

It would be much more convenient all round if computer programers were born with eight fingers on each

The RAM (Temporary Information Storage Space) on the Apple is 48 K standard on the Apple II+ and 64K standard on the Apple IIe.

But exactly how much is that?

Easiest way to think of it is with a byte representing one letter of the alphabet.

If there are 48K in your storage space, in theory you can put in nearly 50,000 letters, which is about 8,500 words depending on the way that you

Sadly, the RAM (our temporary information storage system) also has to hold the information from any program that you have loaded in.

If you load in a word processing program like Zardax or Sandy's you are taking up some of the RAM space on the computer. How much space, depends on the complexity of the program and the ingenuity of the programmer.

The Apple IIs, of course, work off an 8 bit chip which theoretically restricts the RAM capacity to 64K.

Extending the RAM

There are neat and devious ways of getting around this restriction. For example, the rotund Harry Harper produces a RAM card which will give you an extra 256K RAM if you want it, although it does not necessarily work with all programs.

This restriction on the amount of memory beyond 64K will only worry you if you are doing accounts or financial spread sheets of a complex nature.

And if you are, you should be using a Lisa with a 32 bit chip where you can have virtually unlimited RAM.

Summing up, RAM is under normal circumstances only temporary and is restricted in size by the nature of the Apple that you are using.

Where then do you permanently store the jewels of literature that you have written? The program that will solve the puzzle of the Universe and everything else? A horse racing program better than the one we offered in the last issue?

Basically there are two ways to do this (ignore bubble memory for the moment as it is not available for Apples and it is unlikely that this is ever going to change):

Both involve recording the information on to the equivalent of magnetic tape.

Cassettes

For example, you can save your writing/program on to an ordinary cassette tape in an ordinary cassette recorder.

Best if you use brand name cassettes and a half-way reasonable tape recorder. But it is not crucial.

The Apple allows you to type in an instruction that will save the program/ writing on to a cassette. The command is "SAVE".

The information is then fed on to the cassette tape in a series of tones which sound like messages from outer space. The cassette will store and preserve that information for posterity. Loading the information back in to the machine from the tape is just as simple. The key word is "LOAD".

Before anyone starts shouting that cassettes are old technology and









why are we wasting valuable magazine space writing about them, consider this.

The Apple IIs are the biggest selling machines Apple will have for some time to come. Macintoshes, like Apples, take some time to grow. By far the most common way of saving and retrieving information in personal computers in Australia is by cassette. True, Apple users tend to be more disk conscious than other users, but there are still a large number of users there who stick with cassette storage for at least some of the time.

However, it is true that cassettes have several disadvantages to counteract the fact that they are the cheapest form of information saving

device for a computer.

The major problem is that they store the information in a long queue

- one item after the other.

Suppose you have written a program and stored it on a cassette tape about three quarters of the way through, it is going to take you a long time to load the program because you have to work your way up towards it.

This is not to say that cassette tape storage is unusable on your Apple. We use it every day of the week for special situations. It is just that it can be very slow and inconvenient.

Floppy disks

A quantum leap faster – and much more expensive – is the floppy disk drive. The disks are called floppy because in the main they are, indeed, quite flexible.

The disks are rather like extended play 45 rpm records but the surface is smooth, not grooved. Try and imagine a round piece of recording

tape.

The great advantage of these disks is that the recording head can nip back and forwards over the disk as it rotates and drop down very precisely on to a preselected spot. This means that if you want to load a program you can get it in seconds as opposed to minutes on a cassette recorder.

When Apple started, all its disk drives and disks were five and a quarter inches in diameter. This is called standardisation. Yes, there was a slight hiccup at the beginning when they changed the formatting of their disks from 13 to 16, but even

then it was a situation that could be coped with. Note that the measurement is not metric. The computer world resists metrication and other new fangled ideas as if they were the black plague.

Floppy disks are contained in a cardboard case which has a notch cut in the right hand side. A pin has to drop into the space left by the notch to allow the recording head to

come into action.

It took me about six months to realise that recording material normally has two sides and if we cut a notch in the opposite side of the cardboard we would be able to use the reverse side of the disk. Which would save me precisely half the money we spent on disks.

This we have done for seven years and never had a failure. Disk manufacturers issue dire warnings that this leads to the equivalent of foot and mouth disease in computers but we have never found it so.

All the material for this issue of the "Apple Review" is, as a matter of interest, contained on the backsides of disks. And we are not in the habit of risking losing all that copy by using dodgy recording material. We do, of course, back-up – make a copy of – each disk three times. One is a working copy, one goes in a large walk-in safe. And one is kept at other premises. This is known as the "belt and braces" method of disk storage.

One of these five and a quarter inch disks can contain an immense amount of information on one side. You can put about 12,500 words on one side of a standard disk.

If you are in the habit of writing copious amounts of material, then that will give you a rough guide as to how much memory you have to play with. An average novel would take about ten sides of a disk. If you are thinking of storing figures we know from experience that you can get a VisiCalc Cash Flow forecast and a Profit and Loss Forecast for a medium company on to a disk five different times before you run out of space.

That is for the current standard five and a quarter inch disk

But Apple never stands still, and now the Macintosh and the Lisa have three and a quarter inch Sony disk drives. These disks are not floppies, as they are encased in a hard plastic and metal case. Various suggestions have been as to what to call them – most of them unpublishable in a family magazine such as this.

They may be superior to the floppies that everyone has got used to because of their storage capacity, but they have some disadvantages worth thinking about. The disks are damn expensive – about four times as much for comparable storage space. They are not widely compatible with other machines.

Then there are hard disks which are nearly always used in a business environment. They work on precisely the same principles as all other disks, but they have infinitely expanded memories - 5, 10 or 15 Megabytes are quite common - and they are much faster. It used to be commonly said that if you need a hard disk then you shouldn't be using an Apple II and there is some truth in that. If you are looking at major commercial use then perhaps you should be thinking of the Lisa which is designed specifically for the commercial market.

Disk failures

Whichever storage system you use it is worth knowing that the two greatest enemies are magnetism and cigarette smoke.

If you bring a magnet close to your stored information you will have no stored information. Do not experiment

to find out if this is true.

One of the biggest dangers comes from those containers used for paper clips. You shake the container and clips pop up stuck to the magnetic rim. It is not widely known that the paper clips themselves then become magnets. If you drop one on a disk you will stuff the disk up permanently.

If you smoke cigarettes, as sure as Jobs and Wozniak invented little Apples, you are eventually going to lose large amounts of information.

In our editorial offices we use Apples all the time. We had been having an immense amount of trouble with information going walkabout off disks until we banned all smoking.

The problem stopped overnight. It is the microscopic particles from the cigarette smoke that destroy information on the disks.

If you can't stop smoking for the sake of your own health, think of the health of your computer.

The great Australian Apple game contest

ow that we have got into our stride with four issues published, it is about time we started to encourage some more reader involvment.

What has occurred to us is this.

Many professional programmers

have abandoned the Apple II for the

BM PC and its many clones. The

grass was always greener on the

other side.

As time goes by they will no doubt return to the true faith, but until that day dawns there is going to be a essening of the flow of Apple software. That does not mean there be any shortage of new programs. Perhaps it would be more accurate to say that what was originally a deluge will now become a river in full flood.

To fill this gap we see the readers of The Australian Apple Review seeping boldly forward. We gave some considerable thought to the prizes that we should give as we want encourage as many entries as possible.

Therefore to every contestant that enters and has a program published

by us we will give one year's free subscription to **The Australian Apple Review**.

Each month we will choose the program of the month from those submitted and will award the winner \$100.

The grand final will be held at the end of te year and the winners announced in January.

First prize will be hardware to the value of \$2,000 and software to the value of \$1,000.

The reason we don't specify either the hardwarwe or the software is that we want some feedback as to what the most accptable, the most suitable prizes for our readers would be.

Entry date for each issue will be the first day of the previous month. What we will be looking for above all is originality of concept. It is absolutely pointless reinventing the wheel. Programs abound that are merely imitations of other, more successful programs.

To start the ball rolling how about a peripheral fault detection program?

The scene is that your printer is playing up. You boot a program and

select from the menu "Printer". Then a questionnaire comes on the screen which you have to answer. When you have completed the questionnaire you press return and a description of the probable problem and the most likely solution appears on the screen, with a graphic representation of the area of the printer where the problem lies

Is such a program possible?

We think so. And at least it is original.

So let us have originality above all

When you submit your programs please let us have a print out. Nothing else. Without a print out we cannot tell whether the program will work. Without a print out we cannot judge any program fairly and properly.

It is perfectly acceptable and reasonable for you to enter a program every month if you want to. You will still be eligible for the monthly prize and all of those programs will be eligible for consideration for the grand prize at the end of the year. Let's have those letters and programs rolling in.

Have you seen the other Gareth Powell Computer Magazines?

The Australian PC Review and The Australian Commodore Review

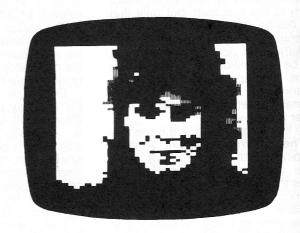
Available from newsagents and computer stores, or by direct subscription (\$18 for six issues, \$36 for 12 issues of each magazine) from

Gareth Powell Pty Ltd Top Rear, 4 Carrington Rd, Randwick, NSW 2031

SECRET PASSWORD

```
REM - SECRET PASSWORD
10
      REM - THE USE OF MID$ FUNCTION,
20
      REM - THE 'GET' STATEMENT,
REM - THE 'FOR...NEXT' LOOP, AND
REM - THE 'IF...THEN' STATEMENT.
40
50
60
      REM
      REM - RESET ALL VARIABLES.
70
      REM - CLEAR THE SCREEN AND
     REM - HOME THE CURSOR.
86
90 HOME
95
     REM - THE PASSWORD IS IN PW$
100 PW$ = "APPLE"
110
       REM
       REM - BODY OF PROGRAM.
120
125
       REM
130 PRINT "ENTER PASSWORD ";
      REM - DETERMINE THE LENGTH OF PW$
140 FOR I = 1 TO LEN(PW$)
150 GET ANS: PRINT "*";
160
       REM
       REM - CHECK TO SEE IF KEY ENTERED
170
        REM - IS PART OF THE PASSWORD (PW$)
180
        REM - IN LINE 100.
190
200
210 IF MID$ (PW$, I, 1) = AN$ THEN X$ = X$ + AN$; NEXT I
220
        REM
        REM - CHECK TO SEE IF THE PASSWORD
230
        REM - IS WRONG. IF IT IS THEN EXIT
240
        REM - THE LOOP AND SET I TO LEN(PW$)
250
        REM - AND THEN GO TO THE ERROR ROUTINE
260
        REM - AT LINE 610.
270
280
       REM
290 IF X$ \langle > PW$ THEN I = LEN(PW$): GOTO 610
        REM - PASSWORD IS CORRECT.
310 HOME
320 PRINT "YOU GOT THE CORRECT PASSWORD !!!!!"
330 END
```

600 REM - PASSWORD IS WRONG. 610 HOME REM - PRINT ON THE 10th LINE 615 VTAB 10 620 PRINT : PRINT "YOU BLEW IT !!!!!" 625 REM - PRINT LINE 635 FIVE TIMES. 630 FOR J = 1 TO 5 635 PRINT CHR\$(7) : REM BEEP 640 NEXT J 650 REM REM - GO BACK TO THE START OF 660 670 REM - THE PROGRAM AND START REM - AGAIN. 680 690 GOTO 10



COMMENTS:

This program will continue to run until you enter the correct password. The password is defined in line 100. If you wish to limit the number of attempts at the password, then insert the following FOR...NEXT loop at lines 82 and 690:-

82 FOR K = 1 TO 5 690 NEXT K

means: DOES NOT EQUAL. means: CLEAR SCREEN and place the CURSOR in the top left hand HOME corner of the screen. means: CLEAR ALL VARIABLES so that they equal nothing. CLEAR END means: EMD of program. means: Single key input. The RETURN key is not needed. GET means: Assign a value to a variable. LET A = 35. You do not LET need the LET command, so do not use it, as it takes up extra room in memory. LET A = 35 is the same as A = 35 in most computer languages. LET A\$ = "COMPUTER" is the same as A\$ = "COMPUTER". means: REMark. This is used to aid the programmer and not the REM program. The program will ignore the REM statement and everything that follows it in the same line. Get into the habit of using REM statements when writing a program. means: LENgth. LEN(PW\$) will show the LENgth of the string LEN PW\$. If PW\$ = "APPLE" then the LENgth of PW\$ is 5 (the 5 characters within the quotes).





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Teach yourself word processing on the Apple

by Anne Reynolds. Boolarong Publications.

Far be it from us to discourage small publishers. We are after all, small publishers ourselves. And far be it from us to point the finger at another publisher for errors of omission – the publisher of this magazine when working on **The Metal Bulletin** was responsible for a correction of a correction. And he got it wrong.

However, Boolarong Publications do appear to have missed the mark by a country mile with this book.

On opening it, you are faced with a mistake sheet (it sounds better if you call it "Errata" but it is still a mistake sheet). It lists at at least 18 major mistakes. And it does not by any means cover all of them.

On the next page the author's note is signed by "DipT, AdvDipT, BEd" which we presume is the unmarried name of the author Anne Reynolds. A strange name that. Possibly originating from the Uttuck region of Inner Mongolia.

The book is based on "Zardax" which is put out by Ian (ex-Dominie) Phillips. If you buy Zardax you get with it one of the best manuals ever written, rivalling that of the Microwriter and the new Sandy's Ile program for the lucidity of its explanations.

Compared to the "Zardax" manual this book simply does not fly.

Disregard the inaccuracies and the less than felicitous design, and you still have a book that would put the first time user off using "Zardax" or indeed any word processing program.

No touch of lightness, no sense of adventure, no humour enliven its solid pages.

Most worrying aspect of all is that in the description of the book it states "For secondary school students". It is not the sort of book we would like our children to read.

Apple Basic Made Easy

by David A. Gardner and Marianne L. Gardner.

Prentice-Hall, \$25.50.

Anyone who writes a manual for the Apple is up against a big hurdle before they start. The documentation for the Apple is so well written that you have to be fantastically good just to equal that standard. To be better you really have to have a very clear understanding of how the Apple works plus an ability to pass that information along in a lucid style.

The two authors have all of these skills and in abundance. It would be silly to say that this is the best book ever published on Apple programming because we haven't read them all. But it is certainly the best book we have ever come across. If you follow through the lessons you will find there is no pain involved and at the end you will be writing in BASIC.

The book is written very intelligently – if the authors think you are gettiong bored or the lessons are getting difficult they insert a light and easy bit to encourage you. The book is illustrated with funny (in both the funny ha-ha and the funny peculiar sense) drawings by Warren Smith who has a strange sense of humour which we like very much.



Despite its price we cannot recommend this book too highly. If you are an absolute beginner and you want to program in BASIC this is indeed the book for you.

The 3-D Animated Apple by Phil Cohen.

by Phil Cohen. Prentice-Hall, \$14.95.

This is not, perhaps, as excellent a title as the previous one, but it has a lot going for it. It teaches you how to make full use of the graphics on the Apple II with BASIC although there are some small side excursions into Binary. It starts off with simple shapes and then moves on to more refined techniques. It is not for the absolute beginner but if you have a reasonable grasp of programming then this title will help you get the most out of Apple's superb graphic facilities. Useful programs included.



How to Write a Program II by Ed Faulk. Prentice-Hall, \$23.95.

We're into fairly advanced programming techniques with this title. It takes you beyond BASIC into advanced programming techniques and shows how professional programmers use short cuts to get to the answers. Before you need this book you will have a pretty good idea what programming is all about. When you finish this book you should have a professional grasp of the subject.

Microcomputer Graphics by Roy E. Myers. Addison Wesley, \$13.95.

This book can be of help if you truthfully don't know the difference betwen rasters and pixels (We didn't, we had to look it up. Raster means that the display consists of a series of horizontal lines. Each line, which is a raster, is made up of a series of dots called pixels). The book takes you by the hand and walks you step by step forward into the line of magical graphics. It is written in a literate and pleasing style with sample programs every step of the way. In the United States the book is offered with all of the programs on a disk at \$15. The address to write to is on page vii in the introduction. This is a sane and sensible approach to graphics. It may not have the whizz bang excitement of Apple Basics Made Easy but it nevertheless can lay claim to being a standard Apple text book. We liked it.

You may see floating around two books by Peter A. McWilliams. One is **The Word Processing Book** and the other is **The Personal Computer Book**. Not worth buying particularly but interesting because the author seems to have been bitten by an Apple when young and hates them. He undoubtedly is an Applephobe. However, to make up for it he loves WordStar. Now that, we find distinctly odd.

Life in a bubble gum factory & Death in the Caribbean

ome of the best games we ever see come from the strangely named Broderbund Software. Broderbund stands for "brotherhood" but we can't make up our minds in office whether it is Dutch.

An Action Game by Pobert Cook
FOR THE APPLE 8

Braderbund Software

Amkaans or German. Or why, indeed, anyone should choose that name for a company.

The latest offering is "Gumball" ch appears to be life in a gumball actory on a typical day. What this actory badly needs is a union ganiser. You spend your time suttling trucks up and down to ect gumballs as they fall out of production line. But when you get a wrong and collect the wrong and collect the wrong and help you see the error of our ways?

Does he indicate to you ways in the you can improve your performance?

No. He does none of those things.

The property of all your previously collected gumballs and the syou start all over again.

This is plainly not a game that a mated in Australia. If a foreman did that in an Australian factory the material would be nailed by his ears

to a door.
From Imagineering.

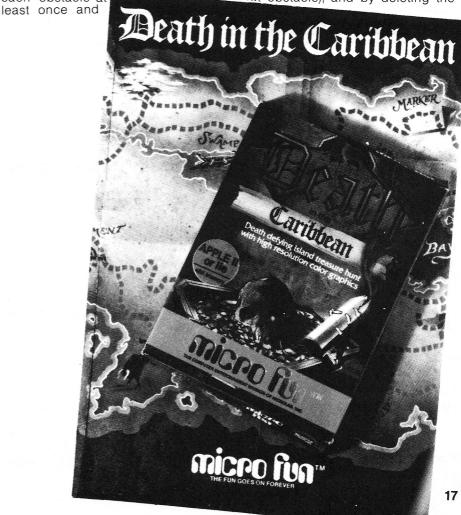
Death in the Caribbean

his is a very interesting game that tests your imagination and patience to the maximum. You are supplied with a map which gives a layout of an island and the position of various man-made and natural features. The graphics show what is around you at any one time and position, and include trees, houses, animals, rivers, etc. The trick is to determine where you want to go and what you will need to get there. This means you must attack each obstacle at

learn what you will need to get by them. Unfortunately, as the title suggests, you will undoubtebly die innumerable times in the process.

You are probably wondering why you are putting yourself through all this torture. If you can decipher coded messages, get past whirlpools and crevasses, and figure out why there is a swing on that tree, then you could find the fortune in bullion and retire knowing that you will never have to go through it again.

The overall idea of the game is excellent, but I think it could be improved by making it slightly harder to die (you need more lives than your pet cat just to get by the first obstacle), and by deleting the



part of the program that removes from your possession anything you have picked up on the way that you thought would come in handy. (There's nothing worse than finding a nice shovel, carrying it halfway across the island to fill an ant hole, only to find the computer has taken it from you.)

Interest is sustained because you never seem terribly close to the treasure and it becomes more a test of getting past obstacles and surviving than becoming rich. We in the office have been playing it intermittently now for a week and have only covered one third of the island without any luck. Actually, I don't believe there is any treasure anyway, so I think I'll go back to trying to save the world from the invading cyborgies and be satisfied with the knowledge that I'm worth 24,000 of the little beasties per life.

Death in the Caribbean is a game that can be played by a number of people at the same time (all offering suggestions). You do not need any paddles or joysticks, all you need is a monitor (preferably colour, but mono will do), a disk drive (48K of memory) and a keyboard.

Sargon strikes again

In Sydney there are about twenty taxi drivers, all of middle European extraction, who conduct a game of chess over the cab radio while they drive about their tasks. For this to succeed they must, of course, retain a perfect mental image of the board in their head so that they can follow the game's progress. It is not easy to balance a chess board on the dashboard of a cab. Probably illegal, as well.

These drivers are in the higher echelon of chess players where the Capablanca and Ruy Lopez openings are discussed alongside Queen's Gambit Declined. We, ignorant sinners, never got past Fool's Mate and Scholar's Mate.

But even these mobile afficionados would be given the game of their lives by Sargon – a chess program which represents the state of the art in game programming.

We tried it out on a chess enthusiast who is of medium club level – which means very good indeed. He, innocent of his fate, played his first game in a relaxed manner. And lost. Coming back like a tiger for revenge he played a second game. And lost again.

Strategically – so we are assured – he played the better game. But Sargon never forgets a move, never lets human emotion get the better of it, never suffers from a blinding headache. And wins.

There are several levels it will play from absolute beginners upwards. If you play chess this program will either immensely improve your game or cause you to kick the screen in thus showing man's eternal dominance over machine.

From Imagineering.

TIPS AND TECHNIQUES

by Graham Black

ASCII CODE DEMONSTRATION

Type in this short program to determine which number represents which letter.

10 FOR I = 65 TO 90

20 PRINT "CHR\$(":I:") = ";CHR\$(I).

30 NEXT I

You should end up with the letters of the alphabet and their respecting ASCII values.

Now retype lines 10 AND 20 as follows

10 FOR I = 1 TO 255

20 PRINT CHR\$(I); " ";

Run the program again and see what happens. You should get the full displant of ASCII characters.

AUTOMATIC LINE CENTERING ROUTINE

REM - AUTOMATIC LINE CENTERING ROUTINE. REM - THIS IS A VERY POPULAR ROUTINE 20 REM - USED BY PROGRAMMERS TO DO ALL 30 REM - THE HARD WORK FOR YOU. 40 50 REM - CLEAR SCREEN AND HOME THE CURSOR 60 HOME 70 REM - SET W TO EQUAL SCREEN WIDTH 80 W = 40REM - SET UP DATA STATEMENTS 100 DATA 3 110 DATA THIS IS THE, APPLE //e, MICRO-COMPUTER 120 REM - READ NUMERIC DATA STATEMENT. 130 REM - A = NUMBER OF DATA STATEMENTS. REM - EACH STATEMENT MUST BE SEPERATED 140 150 REM - BY A COMMA OR BE ON A NEW DATA LINE. 160 READ A 170 REM - THE FOR...NEXT LOOP, WHICH RETRIEVES 180 REM - EACH PIECE OF DATA IN TURN, FROM THE REM - DATA STATEMENTS. 200 FOR I = 1 TO A 210 REM - GET THE DATA AND ASSIGN IT TO A\$ 220 READ A\$ 230 REM - GO TO THE SUBROUTINE 240 GOSUB 5000 250 REM - PRINT A\$ AT TAB POSITION T 260 PRINT TAB(T); A\$ REM - GO BACK TO LINE 200 FOR 280 REM - THE NEXT PASS OF THE LOOP 290 REM - AND GET THE NEXT SEGMENT 300 REM - OF DATA. 310 NEXT I 4490 REM - END OF PROGRAM 4500 END 5000 REM - AUTO-MATIC CENTERING SUBROUTINE 5010 REM - T = PRINT POSITION 5020 REM - W = WIDTH OF SCREEN 5030 REM - TO OBTAIN THE PRINT (TAB) POSITION 5040 REM - IT IS NECESSARY TO TAKE THE SCREEN 5050 REM - WIDTH AND SUBTRACT THE LENGTH OF 5060 REM - THE STRING (A\$) AND THEN DIVIDE

```
5070 REM - BY 2.
5080 T = (W - LEN(A$))/2
      REM - END OF SUBROUTINE. GO BACK TO THE
5090
5100 REM - MAIN PORTION OF THE PROGRAM.
5110 RETURN
```

COMMENTS:

4500 END

This small program has been set up to automatically centre STRING (\$ VARIABLES. It also uses DATA statements, but these do not have to be used. You can set each variable independently if so desired. In which case you would need to delete lines 100 through 310, and insert the following lines:-

```
200 A$ = "THIS IS THE": GOSUB 5000: GOSUB 1000
220 A = "APPLE //e": GOSUB 5000: GOSUB 1000
240 A$ = "MICROCOMPUTER": GOSUB 5000: GOSUB 1000
1000 PRINT TAB(T); A$
1010 RETURN
```

- etc. Each time you want to use the routine, you set the variable to contain whatever you want. There are many ways this program can be written. but the first method is by far the most practicle, as it takes up less room in memory. For it to be truely effective it would need to be condensed to about the lines of code set out below:-

```
10 HOME: W = 20: DATA 3.THIS IS THE.APPLE //e.MICRO-COMPUTER
20 READ A: FOR I = 1 TO A: READ A$: GOSUB 5000: PRINT TAB(T); A$:
   NEXT I: END
5000 T = (W - LEN(A$))/2; RETURN
```

FORMULA PASSWORD

```
10
      REM - FORMULA PASSWORD
20
      REM
   REM - RN = RANDOM KEY FOR
30
40
   REM - FORMULA: RN * 4 - 2
50
      REM -
               " : RN * CN - 2
60
70
      REM - RN$ = FORMULA IN LINE 160
80
     REM
90 HOME
100 CLEAR
      REM - GENERATE A RANDOM
120
     REM - WHOLE NUMBER 1-9
130 \text{ RN} = \text{INT (RND (1)} * 9) + 1
      REM - SET FORMULA VARIABLES
150 \text{ CN} = 4:\text{CD} = \text{RN} - 1
20
```

```
REM - SET PRINT POSITION
160
170 VTAB 6: HTAB 16
       REM - CALCULATE THE ANSWER
180
       REM - AND CONVERT RN TO A
185
      REM - STRING VARIABLE
190
200 \text{ RN$} = \text{STR$} (\text{RN} * \text{CN} - 2)
       REM - GENERATE AND DISPLAY
210
       REM - THE FORMULA KEY ALONG
220
       REM - WITH SOME FALSE ONES
225
230 FOR C = 1 TO CN:CD = CD + 1: PRINT CD;"-";: NEXT C:
     PRINT CHR$ (8);" "
       REM - ERAISE LINE 10 AND
240
250
       REM - SET HTAB
260 VTAB 10: CALL - 868: HTAB 8
270 PRINT "ENTER PASSWORD ";
       REM - SETUP LOOP TO ENTER
280
      REM - PASSWORD
290
300 FOR I = 1 TO LEN (RN$)
       REM - ENTER PASSWORD AND PRINT
310
       REM - A SPACE AND A BACKSPACE
320
330 GET AN$: PRINT " "; CHR$ (8);
       REM - IF THE ENTRY IS CORRECT
340
350 REM - GO BACK AND GET THE NEXT
360 REM - CHARACTER
370 IF MID$ (RN$, I, 1) = AN$ THEN X$ = X$ + AN$: NEXT I
       REM - IF THE PASSWORD IS
380
       REM - CORRECT, THEN CONTINUE
390
400
       REM - PROGRAM
410 IF X$ = RN$ THEN PRINT; GOTO 500
       REM - GO BACK TO LINE 90
420
430 GOTO 90
440 END
500 VTAB 22: HTAB 8
510 PRINT "CORRECT CALCULATION"
```

COMMENTS:

I know that password programs are a dime a dozen, but here is one with a difference. The formula in this program can be changed in several ways. You can change the calculation, and you can change the random key. You need remember only the formula, and when the program displays the numbers, you calculate the first number (RN * CN - 2) and enter the answer. The additional numbers are only there to confuse anyone who would try to guess your password.

There's a calculator, a clock, a clipboard – even a wastebin – all in symbol form.

So, even if you've never gone near a computer before, instead of taking at least 30 hours to learn (as conventional personal computers do), Lisa takes less than 30 minutes.

To tell Lisa what you want you just point to the appropriate symbol, using a palm-sized device called a "mouse".

Move the mouse across your desk and the pointer moves across the screen.

No longer are you totally dependent on the data processing department.

Effortlessly you can turn figures into graphs, draw diagrams, paste worksheets into reports. And print out the lot while you get on with something else.

It's what computers should've been all along.

Does it all sound too easy? Is it just some kind of high-priced executive toy?

By no means.

Lisa is nothing short of the world's most powerful personal computer, with the internal memory of a mid-sized mainframe.

You may even feel Lisa could replace your desk entirely.

Except what would that leave you to put your feet up on?





No computer has ever been as efficient as this.

In many ways, your office desk still remains the most productive way to work.

Everything's at your fingertips. The whole job's laid out in front of you. And you can do 10 things at once.

Yet, every computer ever devised has ignored this. Forcing you to work the way it wants.

(Assuming you can plough through the manual and learn a complex language of computer commands.)

New Apple Lisa is the very first personal computer designed to operate the way you do.

All of its awesome power isn't devoted to making electrons go faster, but to helping you go faster.

By working visually.

Complex computer commands are replaced with familiar pictures, or symbols.

Files look just like file folders, memos like memos.

Dear Sir,

My apologies for not being a Wizard, but I found that after reading TAAR Vol 1 No 3 p. 16 "Numeric Keypad", I was still completely baffled as to how to convert a section of the Apple keyboard into a numeric keypad . . . Please publish or send exact instructions for those less than expert. I have been yearning for a keypad for a whole now, and became excited at the title, only to be disappointed by the contents.

Apart from this minor gripe, I think this is an excellent magazine (a bit too expensive?). Please include more programs, eg "Weekend Australian Racing Program", as these are invariably different and interesting, if

not useful as well!

If at all possible when reviewing programs, peripherals etc please include prices (eg the EPS keyboard).

After reading the article on Dvorak vs QWERTY, I was interested in the looks of the Dvorak keyboard, and was surprised not to find it anywhere. What does it look like?

An explanation at the back of the magazine in the way of a glossary etc would be useful, to explain such things as the speed of a baud, or what a "terminal emulator" is.

I am sorry about all the gripes, because I believe the magazine is excellent, and am considering subscribing!

Hamish Stewart.

Ed. The reason you couldn't understand the Numeric Keypad is because (shame on us) we omitted to publish the program with the article. Sorry – it's in the next issue.

We will try to put in prices where possible (the EPS keyboard costs about \$580 including sales tax.)

Picture of the Dvorak keyboard herewith.

Dear Australian Apple Review,

Congratulations on your independent magazine. It is certainly a pleasant surprise in view of the other advertising brochures which call themselves magazines.

I was particularly interested in G. Powell's article in No 2. It provoked a number of questions since I'm planning on going to Hong Kong to buy an Apple IIe or /// or "fake equivalent".

Firstly, is it possible to write to Hong Kong to get their prices?

Secondly, what about maintenance and servicing of fake Apples in Australia?

Thirdly, is it worth buying real Apples in Hong Kong – are there any real discounts?

Fourthly, I understand that copyright will come down in favour of Apple Inc in relation to Wombats etc. How will this affect all of us with fake Apples from Hong Kong?

Also I understand software can be had at very cheap prices in Hong Kong yet there was no mention in your article.

Peter Botsman.

Ed: (1) No, you can't write to Hong Kong for a price list. (2) You can get fake Apples serviced in Australia, but the situation on this is not good. (3) There are no real discounts on real Apples in Hong Kong. (4) Yes, cheap software is available in Hong Kong (at the Golden Supermarket) of quite reasonable quality.

Dear Sir,

Congratulations on your enterprise in starting up your Apple magazine. I too have considerable faith in the potential of the Apple computer and feel that it has not been anywhere

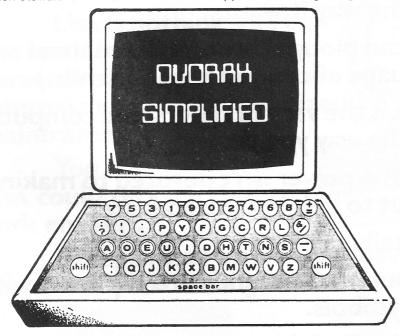
nearly fully exploited.

Further to your reply to M.H. Knight in the December issue, I have found the need of a randomize function in Applesoft. However the reply given will not completely solve the problem. If the program concerned is called without any intervening pause for user input (INPUT or GET), the random number will not be randomized. Whenever the Apple is waiting for input, it cycles through a loop simply incrementing locations 78 & 79.

The short menu program included below includes the randomize routine. To ensure that the user does not anticipate the choice and thereby defeat the randomizing process, the "clear keyboard strobe" command "POKE 49168,0" is included in line

I have included two versions of the program - the first written using the package "PROGRAM DEVELOP-MENT SYSTEM" that I have produced - the second being the resulting translated Applesoft version. PROGRAM DEVELOPMENT SYSTEM consists of a number of programs, the main ones being EDIT, similar in response to the Editor in the U.C.S.D. Pascal system and MAFT (Make Applesoft From Textfile) for translating the resulting textfile into Applesoft. My system makes it much easier to produce efficient Applesoft programs.

Walter D. Bartlett, Mount Nelson.



```
Source Program written by EDIT
      !----!
       ! MENU INCORPORATING !
       ! RANDOMIZE FUNCTION !
       ! WRITTEN BY:-
         WALTER D. BARTLETT !
          19-MAR-84
      TEXT: HOME:
      D$=CHR$(4):H$=CHR$(8):
      VTAB 3:HTAB 6:
       INVERSE:
      PRINT"PROGRAMS AVAILABLE ARE: ":
      NORMAL:
      PRINT:
      N=0:RESTORE
                                       ! USE NAMES IN DATA
      READ PROGS:
                                       ! TO PRINT UP MENU,
 20
      IF LEN(PROG$) THEN
                                       ! COUNTING NUMBER OF
        N=N+1:
        PRINT" "N" .. "PROG$:
                                      ! ALTERNATIVES.
        PRINT:
        GOTO 20
      PRINT" YOUR CHOICE [ ]"H$H$;: ! ASK USER FOR CHOICE BUT
                                       ! DON'T LET HIM ANTICIPATE.
      POKE 49168,0
                                       ! ACCEPT USER'S CHOICE
      GET CHOICE$:
       CHOICE=VAL (CHOICE$):
       ON CHOICE(1 OR CHOICE)N GOTO 40: ! DON'T ALLOW ILLEGAL CHOICE
                                       ! ECHO CHOICE
       PRINT CHOICE:
       RESTORE:
      FOR I=1 TO CHOICE:
                                       ! FIND MATCHING PROGRAM NAME
      READ PROGS:
      NEXT:
      I=RND(-PEEK(78)-256*PEEK(79)):
                                       ! RANDOMIZE
      PRINT D$"RUN"PROG$
                                       ! RUN CHOSEN PROGRAM
       ! CHOICES
      DATA "SPELLING GAME"
         , "NUMBER FUN"
          , "POLAR BASE"
       ! TERMINATE LIST
       DATA
 Running Program as translated by MAFT
10 TEXT : HOME : D$ = CHR$ (4):H 40 GET CH$: CH = VAL (CH$): ON C
     $ = CHR$ (8): VTAB 3: HTAB
                                          H < 1 OR CH > N GOTO 40: PRINT
     6: INVERSE : PRINT "PROGRAMS
                                           CH: RESTORE : FOR I = 1 TO C
      AVAILABLE ARE: ": NORMAL : PRINT
                                           H: READ PR$: NEXT : I = RND
 :N = O: RESTORE
                                           ( - PEEK (78) - 256 * PEEK
    READ PR$: IF LEN (PR$) THEN
                                           (79)): PRINT D$"RUN"PR$
                                  50 DATA "SPELLING GAME", "NUMBER
     N = N + 1: PRINT " "N" .. "
     PR$: PRINT : GOTO 20
                                           FUN", "POLAR BASE"
 30 PRINT " YOUR CHOICE [ ]"H
                                      60 DATA
    $H$;: POKE 49168,0
```

Confessions (of an Apple addict)

by Graeme "Phar Lap" Philipson

aw my first Apple II computer in 1979. This was only five years ago, but five years is an eternity in microcomputing. This Apple II was at a microcomputer show in Sydney's Lower Town Hall, a remarkable event before virtually anybody had heard of small computers. The first articles had begun to appear in the press, but it was still less than a speck on the horizon.

In those days I was selling computers for one of the larger and less innovative computer companies. I was very disillusioned, mainly because we were expected to sell those old magnetic stripe accounting machines for over \$10,000. When I saw my first microcomputer I was dumbfounded. It could do everything some mainframes I had seen could do, and certainly a lot more than an accounting machine. The future, I realised, had arrived.

The Apple I saw at that first ever computer show was running an early conversational program called "Eliza" (that's Lisa with a "Z" – the wheel turns full circle), designed to simulate a human conversation. It was a long way from the ideal of artificial intelligence, in which the test is whether you can tell from the answers if you are talking to a machine or not, but it was, in 1979, very impressive. I became an Apple addict.

Apple the best

There were other microcomputers around at that time. There was the first Tandy TRS-80, affectionately (and otherwise) known as the Trash-80, because of its excruciatingly cheap low-grade grey plastic appearance, and its nasty habit of not working very well. The other machine in the running was the Commodore PET, which never seemed to quite make it in this country. One of its main problems was the many different and non-compatible ROM chips that the makers kept putting in the machine anybody. without telling machines weren't too bad, but anybody could see that Apples were best.

This is where it's at, I told myself. Immediately I resigned from my job and took up a position selling Apples for Rudi Hoess's fledging Computerland/Electronic Concepts organization. These were exciting times. We saw public awareness of microcomputers double every few months, as it is still today. I now consider myself very fortunate to have been with Apples from such an early time: I remember the first Visicalc, the first disk drives, the first Corvus hard disk, the first execrable word processing and accounting programs. In 1980 I saw the first 80column card, a very rudimentary device which gave barely legible spider-like characters on the then very expensive video screens which were available.

Apple Pioneers

All the time I craved my own machine, but they were still quite expensive, out of reach to all but the most well-heeled or dedicated private individuals. Still, in the course of my job selling and demonstrating these machines I was able to indulge most of my computer fantasies. I graduated from Little Brick Out to Sargon and Apple Bowl. I began to marvel at the capabilities of word processors and the power of spreadsheets. And I saw first-hand some of the things people were using Apples for:

A small country building society



used four Apples as financial terminals;

 A professional punter used his Apple to store racing data and perform his involved calculations;

 An amateur magician crossreferenced his tricks, and soon had a full-time job writing programs for other people;

 A doctor stored information on his patients.

There were many more, and this was over four years ago. Microcomputers had definitely arrived, but most people had never heard of them. They were halcyon days for we Apple salesmen, there was no competition, either from other computers or from other Apple dealers.

The end of innocence

Then things began to get complicated. On a trip to the States in 1980 I witnessed the launching of the Apple ///, that ill-fated machine which signalled the end of innocence. With the release of that machine, and the entry into the market of all these other microcomputers, the Apple II was no longer unique. There were other pretenders to the crown.

Things really began to change in Australia around the beginning of 1981. The retailing explosion began, and everybody began selling microcomputers of one sort or another. The Apple II was still the biggest seller, though. It became enormously popular. The fledgling Apple User's Group became a very large organisation, and soon there were nearly a hundred Apple dealers in the country.

With growth came problems. The very popularity of the Apple II led to problems with fakes and compatibility. Dealers experienced big problems with discounting, and the newer machines coming out were starting to make Apple's technology look old.

Still the one

But still the Apple II, in its newer //e

form, is one of the best selling computers in the world. This fact is testament to the brilliance of Steve Wozniak, the machine's designer. The design is so simple and so flexible that peripheral cards can expand the capabilities to do virtually anything you want. These newer machines, the IBMs and Japanese iobs with their bells and whistles, are no great advance on an Apple II. They have more memory and a better keyboard and greater disk storage and 16 bits, but an Apple II will still do most of the things they will. Apple have announced more upgrades for the machine, and the word is that they plan to continue production for another five years at least.

I bought myself an Apple, or more correctly bought the bits and assembled a reasonable facsimile of one in a nice varnished wooden cabinet. I am still an Apple addict. When I left the jungle of retail computer sales for the only marginally loftier world of journalism and commentary my Apple became more

important to me now than ever. What do I do with it? Word processing mostly, with Ian Phillips' incomparable "Zardax" program. I have learnt and demonstrated and sold and been demonstrated dozens of word processing programs on scores of different computers, but this little program on my old Apple II is still as good as any I've seen. It doesn't have some of the others' fancy features or clever interfaces, but in terms of sheer usability it has few equals. Besides, I'm used to it and I'm very biased.

I've got a stack of programs in my tray which I keep beside my machine, but I rarely have cause to use any of them. Visicalc gets trotted out occasionally, as does one of the small database programs. I use Zofarry's excellent "Cashbook" program to balance my chequebook. I've got a small collection of horse-racing programs which I keep for my own amusement. There's heaps of games, but games get boring after a short time. I like "Monty Plays"

Scrabble" (it still amazes me that a machine can play that game) and "Gammon Gambler", but my favourite remains "Crisis Mountain", never a big hit in this country but enormously popular in the States, and rightly so. The fact that my brother-in-law wrote the thing has absolutely nothing to do with it.

No machine is as loved as the Apple II. Those that understand and appreciate such things love the elegance of its design and the sheer artistry of its original concept and execution. You can tell who they are they're the ones who dismiss the new-fangled //e as a bastard halfbrother and steadfastly stick with their old revision B motherboard. No machine has ever been, or will ever be, as significant or as long lasting. I like to think of it as the Model-T Ford of computing: it gave the power of a new technology to the masses, and radically altered our concept of the world. Such is the stuff that history is made of.

TIPS AND TECHNIQUES

PAUSE ROUTINES

Any one of these routines can be inserted where you want a program to pause.

100 PRINT "PRESS ANY KEY TO CONTINUE ";: GET ANS: PRINT

100 INPUT "PRESS RETURN TO CONTINUE "; AN\$

100 VTAB 23

110 PRINT "PRESS SPACE BAR TO CONTINUE ":: GET ANS: PRINT

120 IF AN\$ < > CHR\$(27) THEN PRINT CHR\$(7): GOTO 100

100 VTAB 23

110 PRINT "PRESS Y TO CONTINUE ";: GET AN\$: PRINT

120 IF AN\$ < > CHR\$(89) THEN PRINT CHR\$(7): GOTO 100

COMMENTS:

In the PAUSE ROUTINES you do not need the SEMI-COLON after GET. CHR\$(27) is the ASCII code for 'SPACE'. CHR\$(89) is the ASCII code for the letter 'Y'. You can use any number between 65 and 90 to obtain a letter of the alphabet. 65 = A. 90 = Z

Special function keys for the Apple

by Derek Chan

ne of the reasons for the initial popularity of the Apple computer when it was first introduced in 1977 was the openness of its design. It was favoured by hobbyists (who were the only people interested in microcomputers in those days) because they could have easy access to the hardware and the internal software that controls the operations of the Apple. Consequently, opportunities abound for enthusiasts to modify and customise their Apple to their own liking.

In this article, we shall look at how the Apple handles inputs from the keyboard, and use this knowledge to add some very convenient features to

the Apple keyboard.

These days, the keyboards of recently introduced microcomputers are loaded with user-convenient special function keys which provide single key stroke commands. Indeed, if one has a couple of hundred dollars to spare, one can purchase for the Apple an IBM PC look-alike keyboard which has separate special keys for DOS commands such as RÚN, LIST, CATALOG etc. This is something very nice to have. However, if all you have is a few minutes to spare, the short machine language program in this article will provide you with such features and more besides!

What the program will do

This program will enable you to type in commonly used DOS commands (CATALOG etc) and Applesoft reserved words (INPUT, FOR, NEXT etc) using the control characters. For example, typing control-I will cause the word INPUT to appear exactly as though you have just typed it in from the keyboard character by character - but it only takes a small fraction of the time. Great news for the hunt and peckers! The list of keywords and the control characters which represent them are given in the Table. I have also included some hints to assist in

remembering which keyword is associated with the various keys. Putting stickers on the keys is fine in the short term, but eventually they tend to gum up the works (pun intended).

Notice that not all the available control characters are used. Some are used by Apple for special purposes (namely control-C,D,G,H,J,K,M,S,U,X), while the remainder have been reserved for future program development in this series.

To type in this program, first ensure that DOS has been booted, then enter the MONITOR by typing CALL -151 when you will see the prompt *. Now simply type in each line of the hex code as it appears in the Listing - begin each line with the line number, to be followed immediately by a colon (:) and then the first 2 digit hex code and so on. After checking each line carefully, terminate it with a RETURN and then continue on with the next line. If an error is discovered in an earlier line, simply retype the offending line. After entering the program, type 3DOG to return to Applesoft. Save the program on disk using the command:

] BSAVE CUSTOM KEYS, A\$9500,

To use the control character utility program, simply BRUN it from disk after booting DOS. Better still, BRUN it in your HELLO program. This program can be temporarily disconnected by a RESET or a CALL 38164. It can be enabled by a CALL 38144. When BRUNed from disk, this program will be located in memory just below DOS at starting address \$9500 (hex). It also protects itself from being trampled upon by Applesoft by resetting HIMEM.

This program will work on an Apple II plus with DOS 3.3, an Apple work-alike (provided it is sufficiently alike) or an Apple IIe in the 40 column mode. It is incompatible with the Apple IIe 80 column firmware which uses many of the control

characters to provide special 80 column functions. In a future article, the special features of the Apple IIe will be used to provide the control key functions mentioned here with more enhancements.

How does the program work

Inputs to the Apple via the keyboard are handled by programs in the ROM (Read Only Memory). One such subroutine, called KEYIN (\$FD1B) has the job, among others, of returning the hex code of the input character in the A-register of the

6502 microprocessor.

The program that calls KEYIN actually only jumps to the subroutine whose two byte address is stored in the two zero page registers KSWL (\$38) and KSWH (\$39) for the low and high byte respectively. These two memory locations are called Key SWitches (hence KSW). On a normal start-up, the address of KEYIN (\$FD1B) is stored in KSW (KSWL (\$38) contains the low byte \$1B and KSWH (\$39) contains the high byte \$FB) and this is how KEYIN is accessed.

This arrangement, called an Input Link, may seem a trifle convoluted at first. However, by using this design instead of calling KEYIN directly, the creators of Apple have given us the flexibility to insert the address of our OWN program at KSW. We can then make the subroutine call to KEYIN -WITHIN OUR OWN PROGRAM. In short we can take over the control of the Apple from the standard routines in ROM. Now when KEYIN returns the input character in the A-register, we can proceed on to the next stage of our program depending on the outcome of tests on the content of the A-register.

To illustrate the above idea, consider the following short assembler program located at \$0800. This program is intended to do "something special" when control-A is typed in at the keyboard, but do

| mouning out | oi wioc. | | |
|-------------------------------|-----------------------|-------------------|-------------------------|
| 500 b | (SWL (SWH (EYIN | EPZ EPZ EQU | \$38 \$39 \$FD1 B |
| 0800:A9 OC set input links | | ĹDA | #\$0C |
| 0802:85 38 to \$080C | iks | STA | KSWL |
| 0804:A9 08 | | LDA | #\$08 |
| 0806:85 39 | | STA | KSWH |
| 0808:20 EA | 03 | JSR | \$03EA |

RTS

JSR

KEYIN

nothing otherwise:

; inform DOS 080B:60

080C:20 1B FD

0813:

get input character
080F:C9 81 CMP #\$81
Is it control-A?
0811:D0 F9 BNE \$080B
NO, return

YES, do "something special"

In line \$0808 the call to \$03EA is to inform DOS that we have changed the input link or else the Apple will hang". Upon return from KEYIN, the content of the X-register gives the position of the next character to be stored in the input line buffer, and can be used accordingly; otherwise the content of the X-register should be restored upon exit from the user's program.

Imaginative application of the deas discussed above will let you have the Apple at your fingertips.

Happy bit grinding!

Cast of Control Characters

Command

CATALOG LIST RUN

FOR NEXT STEP THEN

CALL PEEK(POKE PLOT

GOSUB GO TO INPUT PRINT

Cirs scrn set 40 col

Hint Key disk Volume control V List control L control R Run control F For control N Next control Z Ztep control T Then cAll control A pEek control E control O pOke control P Plot gosuB control B control Y Y looks like a branch control I Input Applesoft treats? as PRINT control W Wipes screen Window

*9500.95FF

9500- A9 28 85 38 A9 95 85 39 9508-20 EA 03 85 A9 FF 73 A9 9510- 94 85 74 60 A9 1B 85 38 9518- A9 FD 85 39 20 EA 03 60 9D FD 9520-00 02 E8 20 FO 60 C9 9528-20 1B FD 18 9B 90 01 9530- 60 C9 97 DO OA 28 A9 85 9538-21 20 58 FC A9 AO 60 C9 FB C9 9540- 80 FO 83 FO C9 FO F3 C9 9548-84 FO 87 EF **C9** C9 9550-88 FO EB 88 FO C9 E7 9558-88 FO E3 C9 8D FO DF C9 9560- 91 FO DB C9 93 FO D7 C9 D39568- 95 FO C9 98 FO CF 38 9570- E9 80 8D 9D 95 AO OO B9 95 9578- 9E C8 C9 FO AA 03 4C 9580- 77 95 CE 9D 95 AD 9D 95 00 FO 9588- C9 03 4C 77 95 B9 9590- 9E 95 C9 AA FO A6 20 20 4C 9598- 95 C8 8F 95 OO AA C3 CC CC AA 95AO- C1 C7 CF D3 D5 95A8- C2 C5 **C5** AA AA AA DO CB C6 95B0-**A8** AA CF D2 AA AA AA 95B8- C9 CE DO D5 D4 AA AA AA C9 9500- CC D3 D4 AA AA CE C5 95C8- D8 D4 AA DO CF CB C5 AA 95DO- DO CC CF D4 AA AA D2 D5 95D8- CE AA AA D4 C8 C5 CE AA 95EO- AA C3 C1 D4 C1 CC CF C7 95E8- AA AA AA C7 CF AO D4 CF 95FQ- AA D3 D4 C5 DO AA D5 D4 95F8- AA AA C3 C1 D4 C1 CC

Adventurer's Corner

with Ed Mehrtens

Zork I

ork I is the first in a trilogy (although rumours persist of a Zork IV) by Infocom. Zork is so popular, there are even buttons available with the message "I AM A ZORK GROUPIE", "I LOVE ZORK", "ZORKERS DO IT UNDER THE RUG" and 'I'D RATHER ZORKING".

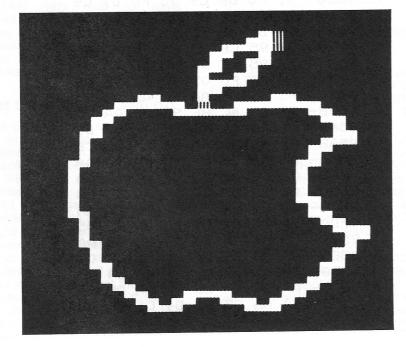
In Zork the object is to collect 19 treasures and place them in a trophy case. This plus other actions will get you a maximum score of 350. Of course getting or even finding the treasures is not easy and there are monsters to overcome. The first monster you will meet is a Troll, who will try to chop you into small pieces with his axe, then the Thief, who will rob you blind, plus others. There are puzzles and mazes to solve, secret passages to find, monsters to overcome and magic to learn. You will need the save game feature, and anyone claiming to have completely solved it on the first try had better have proof of his claim. For the adventure of your life, roll back the rug, check your sword and lamp then down through the trapdoor.

Giving clues is always difficult, as just writing the answers would ruin an excellent game for everyone, so the method requires some effort on your part. The form was adapted from that used by Scott Adams. If you have a problem read the questions, and if your question is here it will be followed by a series of numbers. These numbers correspond to words in a table following the questions, so transpose the words for the numbers and you have an answer. Please note, only the more difficult parts are given and even then sometimes only enough to point you in the right direction. Draining the dam is one part where the whole sequence is not

My thanks to Ted Harper, who provided most of the clues for Zork 1.

Zork I clues

- (1) Can't open the egg? 35,1, 43,13,24.
- (2)Can't open the grate? 55,4,9,1,49.
- Thief? 39. (3) Want to kill the 27,6's,31,19,52,8,29,16.
- Trouble with the Cyclops? 45,11,33,15,22,56.
- (5) More trouble with the Cyclops?
- (6) Want to kill the Cyclops? 31,19,46. (7) Looking for the Temple? 25,
- 54,9,38,3.



- (8) Trouble with the mirror? 51, 20,8,57,3's.
- (9) Dead and at Hades? 48,5,1,34. (10) Can't go between the two? 26,57.
- (11) The bat is a problem? 25,53. (12) Can't empty the dam? 9,1,30,3.
- (13) Can't remove the gold coffin? 13,24,30,1,34,22,48.
- (14) Can't find a boat? 36,5,1, 47,59,1,32.
- (15) Can't find a pump? 36,9,1,32.

The Treasures

- Are you missing the:
- (16) Pot of Gold? 41,10,5,50.
- (17) Platinum bar? 6,44. (18) Emerald? 36,5,1,28.
- (19) Crystal skull? 25,7,42,22,17,5,14.
- (20) Chalice? 9,1,43's,23.
- (21) Scarab? 2,60,12,5,40,21.
- (22) Diamond? 25,18,9,23.
- (23) Scepter? 36,9,63.

Code Words

- (2) dig (1) the (4) is
- (3) room (6) say (5) at
- (7) bell (8) two
- (10) scepter (9) in (12) shovel (11) likes
- (14) Hades (13) take
- (16) wounds (15) eat
- (17) candle (18) machine (20) are (19) can
- (21) cave (22) and
- (23) coal mine (24) it
- (26) rub (25) use (27) diagnose (28) buoy
- (30) maintenance
- (29) serious (32) dam
- (31) you
- (33) to (34) altar
- (35) let (36) look
- (38) dome (37) Ulysses
- (39) when (40) sandy
- (42) book (41) wave
- (43) thief (44) echo
 - (46) not
- (45) he (47) base (48) pray
- (50) rainbow (49) maze
- (52) survive (51) there
- (54) rope (53) garlic
- (56) drink (55) key
- (58) play (57) mirror
 - (60) with
- (59) of
- (62) lair (61) machine
- (64) wind (63) coffin (65) forest
 - (66) clockwork canary

It's raining programs for Macintosh

ne of the problems we have faced when testing the Macintosh is that the only programs available for it in Australia heretofore have been Apple Writer, MacPaint and Multiplan.

One of the problems we have faced when testing the Macintosh is that the only programs available for it in Australia heretofore have been Apple Writer, MacPaint and

Multiplan.

No one loves Bill Gates' products more than we do, but he would be the first to admit that MultiPlan will not be the greatest thing since sliced bread on the Macintosh until those 256K RAM chips are retrofitted, giving us a decent memory to play with. And while the powers of the word processing system are awesome, we have difficulty in seeing what Mac-Paint is for. Sure, it allows you to produce beautiful doodles – but we do it better, quicker and cheaper with a pencil.

Therefore, when we learned of the full range of goodies that will be available for that machine in the near future – many of them to coincide with the Australian release of the machine – we were overjoyed.

Let us share that enjoyment.

Thinktank

First there is "ThinkTank", a software package designed to help big business honchos (and would-be big business honchos) plan, organise and devise strategies. It interfaces with other Macintosh programs. You develop a project using "ThinkTank" and then transfer it into a word processing program so hat it can look pretty. Sounds good to us.

PFS

The whole of the PFS family is being upgraded to Macintosh use. In ruth, we don't go overboard for the PFS word processing system, but the rest of their products are the state of the art. PFS:File and PFS:Report are the stars in their galaxy.



Macintosh personal computer system

The president of the company responsible, Fred Gibbons, says "The program will provide the user with the ability to utilise the mouse to reduce keyboard input and to move instantaneously to any position on the screen or any position within a PFS form." We think he is saying the mouse will mean less typing.

Fantasy games have their enthusiasts, and from Sir-Tech (marketing director Robert Sirotek, we kid thee not) comes their best seller "Wizardry" fantasy game in Macintosh format. It has been totally rewritten to take advantage of the Mac's sophis-

ticated new features.

Simon and Schuster, that august American hardcover publishing house, has an electronic publishing division who have produced a Typing Tutor III for the Mac, plus a typing tutor type game called "Letter Invaders".

From BPI will come four business accounting packages. Mark you, these will be for American business and accounting practices and they will need to be modified before they are released in Australia.

Mastertype

From Scarborough Systems comes "Run for the Money" by Tom Snyder. This is basically a Monopoly clone in electronic drag. From the same publishers will come "Mastertype" (the only educational program ever to sell more than 100,000 copies, says the press release), and "Songwriter" which allows you to write songs whilst knowing nothing about musical theory or notation, thus encouraging a trend which has become distressingly obvious in popular music over the past ten years.

They also have "PictureWriter" which they say "makes drawing and colouring fun for the children". For this they need a computer? And colouring fun? On a black and white monitor? PR hype is all very well, but this is ridiculous.

From the same colour blind publishers comes "Phi Beta Filer", a database which is extremely simple to use, and "PatternMaker" which, logically enough, allows children to draw patterns on the screen.

From Naru Enterprises comes a

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SOFTWARE REVIEW

press release refreshing in its honesty. They say: "Although every software manufacturer will disagree with one or another aspect of Apple's standards, the benefits of adherence so far outweigh the disadvantages that we may look forward to the Macintosh being the first computer that will, in fact, be as easy to operate as the sales demonstration implies."

They will be issuing a database, tentatively called "FileFinder". Naru point out that because the Macintosh uses a 32 bit chip the limitations of the number of field and record storage types will be a function of the mass storage hardware, not the software. The people at Naru seem intelligent, amiable coves. We look forward with great anticipation to testing their software.



Macintosh MacWrite booklet

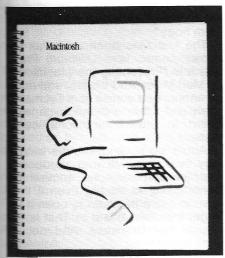
Microsoft programs

Microsoft have, of course, been in the forefront of getting programs up and running for the Mac. They have Multiplan; MicroSoft Chart, a business graphics program; MicroSoft File, a database; and their own word processiing program "The Word" which we are still playing with and will review in a future issue.

As well MicroSoft have produced MBASIC for the Macintosh, which takes full advantage of the large direct addressing capability of the Macintosh's Motorola 68000 microprocessor. It is source code compatible with all standard versions of MicroSoft Basic, which means that a whole slew of programs can be transferred with ease.

From Megahaus comes MegaFin-

der, another data base program. Lotus are making Lotus 1-2-3 available on the Mac (you could really do with the expanded memory for that). InfoCom will let you get as annoyed at Zork on a Mac as you did on any other machine. They have a stack of other programs in the same mould. Infuriating, intellectually stimulating, addictive.



Macintosh instruction manual

Human Edge (has it occurred to you that there must at some time be a limit to how many software house names the human imagination can conjure up?) have a set of programs shortly to be released which are basically designed to help the salesman in his job. We take the unpopular view that selling is a profession that requires intelligence, mental discipline and innovative ideas. Anything that can help we greatly welcome.

Habadec have transferred the diary and the telephone directory to the computer. We always thought that doing these sort of chores electronically was silly until the Mac came along. If the idea is that the Mac is part of the office furniture and remains switched on all day with the screen suitably dimmed, then this sort of program makes logical sense. All it needs is interfacing with a voice module and you can have messages Re "Hustle along now and get dressed - your wife is due in ten minutes."

Desktop Software are introducing a database that can be programmed with no previous skills, unlike, say, DBase II which requires the abilities

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of a trained programmer to extract its full use.

Fast Track is part of a group of application packages' which allow you to control inventory, manage your time better and redesign your office. "Look, D.S., don't you think it would be better to put the bar over there behind the indoor plants? Then you can keep on serving your visitors the same lousy lukewarm coffee in card-board cups." We like it.

Who wants to be a millionaire? With "Millionaire", "Tycoon" and "Baron" you can grind the faces of the poor into the dust and become as rich as . . . Wozniak and Jobs. Has it ever occurred to you that the personal computer industry produces more millionaires who are reasonable human beings than any other? Sure, there are some horrors. But compare personal computing with advertising and retailing and the honchos of the silicon chip come out covered in glory.

One program it is unlikely we will see here unless it is heavily modified is CRTplus, which according to Model Number: MO100 Made in U.S.A. Serial Number: 6778 Serial Number: 6778

Aurora Systems "is a decision support tool designed to help the financial service industry cope with the new competitive climate caused by deregulation". For Australia many changes will be needed. They will have to delete the whole section on ethics as a start.

For farmers

Finally, from AgDisk are coming 23 programs for farmers. Cut to scene of manure covered farmer slowly strangling mouse as screen reads "C'mon Elmer, time to slop out them hogs."

The first Mac book as far as we know comes from Dilithium Press and it is "Presenting the Macintosh" by Merl Miller. And the first add-on to be announced comes from Tecmar in Cleveland Ohio with an expansion board to provide additional serial ports.

Apple are spitting into the wind if they think they will ever produce a machine that someone, somewhere is not going to modify. Even if they have to use a hacksaw to open it up to get their new board in. That is the way of human nature. And not, in itself, a bad thing.

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The new look at Apple an interview with John Cavalier

by Gareth Powell

pple, rightly or wrongly, have always had the appearance of being run by a bunch of laid back college graduates who were great at designing machines - but not too hot on administration.

Now there is a new look at Apple. They have seen that the personal computer market is not going to be roses, roses all the way. They now seem to clearly understand that designing genius needs to be backed up by marketing competence and administrative know-how.

No single person exemplifies that new direction of Apple so well as John Cavalier. His official title is Vice President, Apple Computer Inc, in charge of sales and marketing for the Americas, the Far East, Australasia and Africa.

For Apple he is a very unusual sort of executive indeed. He is no longer in his twenties. He wears suits. And he has had considerable experience in the marketplace as President of Atari Products Company, a division of Atari Inc.

In appearance John Cavalier looks like a cross between Hoagy Carmichael and a disappointed bloodhound. He speaks fluently, expertly and cogently. He does not hesitate to agree that there have been, and there still are, faults in the Apple organisation. But he is very persuasive when he speaks of what is being done to right these faults.

Speaking to John Cavalier, you realise for the first time that Apple have started to acquire the administration and marketing know-how that has made IBM's entry into the personal computer market such a

great success.

The Macintosh

Plainly the first subject of great concern is the Macintosh. In a limited sense, the future of Apple rests on its fortunes. It was said that the first hundred days would see whether the Macintosh was a success or not.

John Cavalier said: "Our target was to sell 50,000 Macs in the first hundred days. In fact, we have orders for 70,000 and we would have been able to sell more if we had been able to make them. Our new factory is building up to full speed and we will soon be running two shifts. Sales are spread evenly among universities, regular dealerships, with quite a few large orders from big businesses. We've seen success in a lot of different channels. As we've passed our target for the hundred days before the hundred days are nearly over the Mac can be considered to be a major success.'

John Cavalier was not, however, as certain as to who was buying the machine, who the actual end user was. Obviously, the first major push was through universities, which have taken to the machine in a big way. But the other users are not so well defined.

"I don't think we know yet the precise purposes the Mac is being bought for - but if I had to guess I'd say as a personal business computer. My intuition tells me that. I don't think corporations are into it vet except for Peat, Marwick and Mitchell who placed one major order. We don't really have those facts yet.

About the university sales he had this to say: "We thought if we could make it easy for the universities to offer the Macintosh to their students at a very reasonable price we would be attracting a very good audience for this machine. They would be going on into industry over the years and would be familiar with the technology."

Judging by the alacrity with which the universities in the United States have made the Macintosh almost mandatory students' equipment, this approach seems to have worked.

Turning to Australia, John Cavalier was adamant that the Macintosh would be launched here in a major way in the month of April. We queried this very carefully, but he was adamant on the point and said that both the Australian and the Japanese launch were immensely significant to Apple and they would both be happening on time.



John Cavalier was here, of course, for the PC Show at which he gave a well attended and well appreciated talk. One of the more interesting parts of that talk was a checklist he had prepared to be used by anyone buying a microcomputer for business or educational purposes.

He said: "I have put together a checklist of questions.

"First and foremost, is the system user-friendly?

"State-of-the-art technology is all fine and good but can ordinary people quickly put it to use? And when that individual moves on, can his or her replacement easily utilise the system?

"An unfriendly system will leave you or your company with some of the most expensive, dust collecting machines in history. As they say, you can lead a horse to water, but if it has to invoke three different multisyllable user commands, it won't drink.

"Second question. Is the system

flexible? Is it an adequate word processor? Is numeric input easy? What kind of graphics package can it display and how easy is it to employ? What is required if you wish to run integrated software? Is it easily transported?

"Third. What is the historic reliability? Our research shows that this is one area that concerns all

purchasers and users.

"Fourth. How compatible is the product? As operating systems come and go, does the machine have the ability to adapt, to change? CP/M was the hottest generic standard for personal computers only 18 months ago, now it's beginning to look like an also-ran. If you can't easily judge the future compatibility of a given product, once again look at the company's track record. Has it produced systems which can easily be enhanced or improved?

"Fifth. Longevity. Does the manufacturer continue to provide long-term support and continued product enhancement? Or is it a matter of being forced to continually "buy up" in order to get a new feature or a new peripheral?

"Sixth. Has it got sophisticated and advanced technology? Technology drives this industry and will continue to do so for several years to come.

"Seventh. Price. Value for money. There is more to value than up-front cost. Value means the capability to provide all of the elements in this checklist and still meet your present and future needs.

"Eighth. Expandability. Either through expansion slots or its internal architecture, can it expand and adapt

to a future challenge?

"Nine. Networking. Can it network within the confines of your office and is it open and flexible enough to

develop the appropriate protocols once a local area network standard is established?

"Ten. What is the machine's data communications capability? Can it talk to an IBM mainframe? At the same time, can it emulate VT100 or VT52?

"The office of the future will require all of the above and our opinion is that it is all available today."

There speaks a true marketing man, someone who has both his feet firmly on the ground but is able to see the future with a visionary's eyes.

John Cavalier is a new brand of executive at Apple Inc. There is no doubt that he was needed. There is no doubt that he will make his presence felt. After talking to him at length I felt wholly confident about the future of Apple, both in the United States and in Australia.

HARDWARE REVIEW

Doing it with one hand

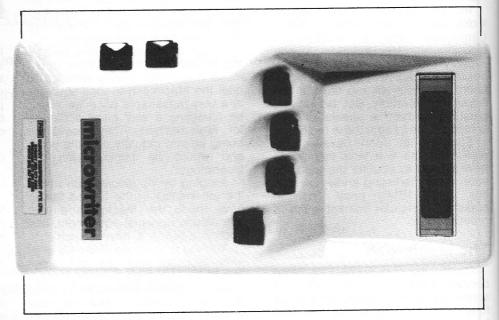
e have been playing around for some weeks now with a totally new way of inputting information into the Apple. The way we have been doing it is through a Microwriter, which is imported into Australia by PHM Pty Ltd.

The machine has six buttons, which can be pressed in different combination to produce all the letters of the alphabet, all punctuation, all numbers – in fact, the whole ASCII

code.

At first sight the machine looks immensely complicated – but in fact it is extremely easy to use. You can get the basic hang of it in, say, twenty minutes, and after a few days use it becomes faster to key in text files using the Microwriter than using the keyboard.

We'll be doing a full review of this machine in our next issue showing how we interface it with our Apples using an RS232C interface. Much of the next issue will be written on the Microwriter, and we are compiling a program to go with it which we think



will make it as fast to use as shorthand. If not faster. Early experiments show that using our program, copy can be inserted almost as fast as you can think. Read all about it in the next issue.

What's new, Pussy Cat?

by Gareth Powell

he news that Dick Smith (the electronic company which is controlled by Woolworths and has as its logo a drawing of Dick Smith making him look like a man with a packet of boiled lollies in his pocket) is going to market a microcomputer which is Apple compatible but not an Apple copy was viewed with great interest by this magazine.

It has been suggested (but not by Apple) that we should ignore all Apple copies and clones as being rip-offs and outside the pale and unworthy of comment.

This is plain daft.

If you accept that news is what somebody somewhere doesn't want to see published, then the Cat is news. And we believe that Apple enthusiasts have a right to know about it.

The genesis of the Cat goes back

a fairly long way.

Dick Smith has had considerable success producing a TRS 80 clone called the VZ 200. It is produced in Hong Kong.

If the Dick Smith copy of the TRS 80 sold so well then it was obviously only a matter of time before they looked at the Apple market. The results are apparent in the Cat (sold as the Laser 3000 in Hong Kong). They have gone about it in an extremely clever way, and Apple in Cupertino could do worse than to pay heed to some of the improvements they have incorporated.

First of all they have produced a machine which has got all the bells and whistles on it that Apple owners

have always wanted.

Lean and low

The keyboard and the main unit are all one, as in the Apple, but the physical dimensions are very different. The Cat is long, lean and low.

Its width from back to front is half that of the Apple. It is about one centimetre lower and eight centimetres longer. As you look at it from above, there is a red on/off light to the bottom right of the keyboard. The cap lock key also has a light to show when it is operative.

The keys are coded in three colours – grey, white and orange. The colour of the machine is dark tan on a light tan background. It looks good. As a design it has much to recommend it.

Let us look at some of the other extras on the keyboard – extras which we have yearned for on the Apple.

Numeric keypad

The keyboard has a numeric keypad. Those of us who work with spread sheets know what an absolute blessing that is. Using your right hand on a keypad that is precisely configured, you can hammer in figures certainly five times as fast as you can with the standard array of figures along the top of the Apple keyboard. Yes, we know that you can buy a plug-in keyboard addon from Apple. But why should it not be built in as on the Cat?

Cursor arrows

Above the numeric keypad is a series of arrows which move the cursor around the screen. If you use your computer as a word processor the ability to send the cursor zapping around the screen with four dedicated keys is worth the price of admission alone.

This function has become a standard feature of most machines (strangely enough, not of the IBM which incorporates the cursor move keys with the number pad) and it is, in our opinion, an almost essential part

of a keyboard.

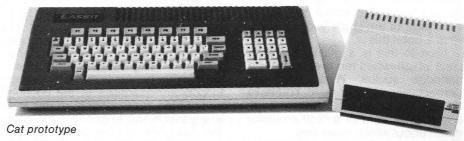
Apple have got around this discrepancy in the Macintosh and Lisa with the mouse. Despite our known bias against the mouse (ideal for the man with three arms) it does make working with the machine much easier. Cursor movement keys achieve much the same effect. Whether you prefer one to the other is strictly a matter of personal choice.



Function keys

Along the top of the keyboard are eight programmable function keys. Their default setting is in BASIC and if you are writing a program they will save you much time and effort. They can, however, be programmed to operate within any program and, again, in the word processing mode they could be invaluable.

We know that Dick Smith has commissioned a word processing program specifically for the Cat. We know the programmer. A man who it is fair to say is a genius. If, as he will, he makes full use of these function keys it is possible that the Cat will end up with a word processing



program that far outstrips Zardax in its ease of use simply because of the built-in functions on the Cat.

Extra Keys

There are three extra keys.

"Tab" which is fairly self-explanatory if you are a typist. Press it and the cursor moves a pre-set number of spaces across the page. This tab position can be specified but the default setting suits most word processing operations.

"Break" which functions almost precisely the same as Control "C" on the Apple. It stops the program without wiping it from the memory.

"Rubout" functions as a delete

key

This gives us a total of 81 keys on the board. Compare this with the Apple II+ which has 53 or the Apple He which has a couple more. These extra keys are not extra add-on flash. They all have a real and proper purpose and the Apple would be a far better machine if it had a similar layout.

On the machine we are testing, the feel of the keyboard leaves something to be desired. We understand that this is being improved before the model is released to the Australian

public.

The plastic moulding that holds the keyboard is as solid as the rock of Gibraltar and is made from good quality plastic which appears to be as hard and durable as that used by Apple.

Ergonomically it is less than perfect as the front edge is too high for a perfect typing position. At that it is slightly lower than the Apple's keyboard and the keys curve upward in a most satisfactory manner.

Plugs and interfaces

On the right hand side of the machine is an Atari type plug for a joystick. For those of us who are forever kiddywinkies at heart, this is a good thing. If you have fiddled around trying to connect paddles to the inside of an Apple you will know what a boon this is.

Next to this is a plastic blanking plate which, when removed, reveals a cartridge socket. What, you ask perceptively, will fit in there. You have a choice between a 128K RAM card. a 64K RAM card or a "soft emulator card", about which more later.

Back panel

At the back of the machine there is further selection of goodies. Reading from the left we have a Centronics interface for a printer which is going to save everyone a lot of money.

Next is a port for the floppy disk controller. Unlike the Apple all additional cards are on the outside of

the machine.

We don't like it.

True, they are well protected in plastic. True, they do not protrude excessively. But if you move your computer around at all the chances of dislodging one of these plug-ins is very high. We prefer our disk controllers built into the machine.

As they have enough space inside we can only surmise that the disk controller was not built-in to keep the

basic price low.

As a marketing philosophy we can understand it.

As a user we can disapprove.

Understand that it works perfectly well. We have no complaints on that score. It is just that it makes a low, lean machine look bulky.

RS 232C

Next to the floppy disk port is - joy of joys, all earthly joys excelling - an RS 232C port. There is an optional plug in module with the baud rates dip switch selectable from outside the machine. Baud rates available range in seven steps from 110 to 9,600 and it can work in full or half duplex mode. That is truly excellent.

Now we come to another complaint. The fitting of this module onto the main body of the machine leaves something to be desired. It is a sloppy fit and we have no intention of taking it on and off again because our experience with Hong Kong manufactured electronic goods - and that experience is wider than most people's - tells us that the fitting will get sloppier and sloppier the more times it is put on and taken off.

Next to the RS 232 C port is a

volume control.

As it happens we have fitted one to our Apple because we can't stand the damn thing beeping at us when we have a hangover from indulging in copious quantities of the cooling amber fluid the night before. This is a lovely touch and exemplifies the care that has gone into the design, not the manufacture, of this machine.

Moving along to the right we have a DIN plug for a cassette interface.

Those of us who scoff at cassettes will do well to remember that it is still the cheapest way of storing data, that it is still the most widely used data storage system on personal computers in Australia and that IBM has incorporated one on their PC.

Next to the cassette port is the colour video outlet which goes to a television interface if you are going to use it with a television set. This interface occupies the same role in life as the PAL card on the Apple.

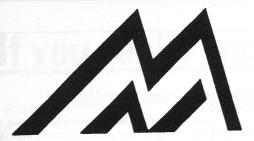
Next port along is a DIN plug marked RGB which will connect to an RGB (Red, Green and Blue) monitor. If you have the right monitor. We plugged it into our RGB monitor with zilch results. Dick Smith is selling an RGB monitor with the Cat and this presumably works like a charm. But there is obviously some testing required to see that this machine runs off every RGB monitor available in the market.

There is no doubt in our minds whatsoever that RGB monitors will, in the very near future, totally dominate the personal computer market place. The colours are light years - if you'll excuse the expression - ahead of those you get from a colour television and prices have already gone below the magic \$500 mark. Watch them come down even further in the near future.

Next to the RGB outlet is a switch marked colour defeat. This allows you to use the monitor in monochrome if your program requires it.

We can see very clearly why this switch has been included but we look forward to the day when all programs are so adapted that they will work on a full colour screen. Colour can make a program much easier to use. And it must eventually be used in every program - including word processing. Interestingly there is no RCA socket for a phosphor green monitor. This to us seems a strange omission.

Next to the colour defeat switch is a "reset" button. Those of us who have suffered on the Apple II (not on the newer versions) from hitting the reset key by mistake for the return key and watched several hours of work go down the glughole will know how absolutely vital the positioning of this button is. The Cat errs on the side



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of caution which is only right and

proper.

After the rest button comes the power inlet and then the "on/off" switch. We have always found switches to be the Achilles heel of Hong Kong manufactured machines. Not this one. It feels certainly as strong as that on the Apple.

Under the case are two switches which can only be moved with an

electric screwdriver.

One selects 50 or 60 Hz so that the machine can be adapted for other countries.

The second says 40 column/80

column.

We cannot see what this switch is doing lurking under the machine. If you are using either mode you hardly want to turn the machine upside down and fiddle around with an electric screwdriver to change the number of columns on the screen.

No doubt it is software selectable, but many, many programs will not have that patch written in, and the very first thing we would do with a Cat is have a vet remove the switch from the underside and fit it in some way to the top of the keyboard.

The idea of having a switch for 80/40 column selection is a good one – we use one with our Videx board. But

it has to be accessible.

The disk drive is slim line and seems like a TEAC clone. The disk is locked in by a lever and the drive makes those harsh noises which we have come to connect with slim line drives. However, the disk drive we tested worked extremely well and did not wipe or damage any disks.

Going inside

The top of the main module is fastened to the base with six screws. Now we get down to the guts of the matter.

The mother board bears no resemblance whatsoever to the Apple motherboard.

There are two VLSI (Very Large Scale Integrated) chips by Toshiba –

TC156027AP and TC156014AP. Looking at the board no-one could suggest that physically it is an Apple

rip-off.

And looking at the board you find the first real problem with the Cat.

There is only one word to describe the quality of the soldering and circuitry – ratshit.

It may be that the model we have

for test is an early model and this aspect of the machine is going to be improved.

With our knowledge of Hong Kong manufacturers we know that will only happen if Dick Smith wields the big stick.

Our guess is that the board we looked at had been jobbed out for home assembly. It looked like our early attempts to complete kits based on designs in electronics magazines.

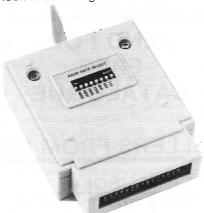
We have seen two of the Cat machines and the insides of both were less than jolly. But the guts of the one we have on test is simply not

acceptable.

The wiring to the loudspeaker is stuck down with Sellotape, the wiring on the loudspeaker itself is horribly badly soldered, the motherboard has come unstuck at one corner. None of the chips are socketed but are soldered directly into the motherboard.

This is not necessarily a bad thing if the soldering is of an extremely high standard. This soldering is not.

The resistors and capacitors are stuck in at all angles.



Baud select rates for RS232

This is simply not good enough and Dick Smith needs to get his quality control sorted out before he releases this machine on to the Australian market or he is going to have a servicing bill under guarantee that will choke a horse.

When we took the cover off the base there was a loose screw sculling around inside. It must have a purpose, it must have a reason. What,

we know not.

We did not take the power supply apart to see if it had a fuse – we were scared we wouldn't be able to get it together again. But judging by what we saw of the rest of the wiring we would work on the assumption that it

is not fused.

Underneath the case is a notice which says "Do not remove cover. No user-serviceable parts inside."

We can believe that.

Does the machine work?

Yes it does, remarkably well considering the state of its innards.

We tested a wide range of Apple software on the machine and over 60% worked.

We are assured that if you add an emulator board (not available at the time of this test) this increases to over 90%, and the Cat will run almost any program with very few software modifications needed.

Is it legal?

We now run into some very tricky territory indeed.

The machine does not look like an Apple, has different controls from an Apple, has a totally different mother-board from the Apple.

We are not lawyers but we could not see an action for passing off having a reasonable chance of

success.

Whether it breaches Apple's patents is something that will have to be decided.

There is no doubt that the disk operating ROMs in both the machine and the disk are identical to those in

the Apple.

If you access the machine code you can see quite clearly that it is a straight copy. However, this copying would have to be explained to a judge so that the judge could clearly understand where a possible breach of patent or copyright may have occurred.

Whether this can be done in Australia is open for considerable

debate.

Apple are still appealing against the Wombat decision and it would be futile to try and guess at the result.

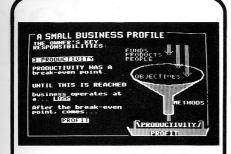
The Cat is a very different machine to the Wombat and it will be interesting to see what course of action is open to Apple, and what action, if any, they eventually take.

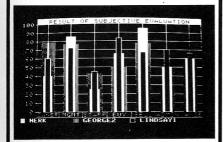
Summing up, we think the Cat is a stunning machine in conception. It has everything on it that we always wanted on the Apple. But the workmanship on the inside is so shoddy we believe that, unless it is dramatically improved, it may well create problems for the end user.

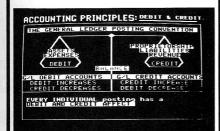
The legal situation we will leave for resolution by wiser heads than ours.

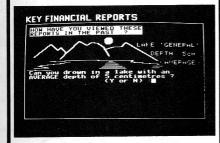
If you really want to know — ASk!

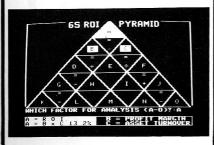
Small business needs a key to the accounting scene.











What advice would you give these people?

EXAMPLE

18 months ago Mr L was worried by declining custom due to a large department store nearby. He decided to fight back by reducing profit margins, while increasing floor space, merchandising lines, his advertising. A 'bulk store' approach. All these changes required extra capital and extra effort. He now has his first full twelve months trading results.

Is this the BETTER way to operate? PROFIT is only part of the answer.

EXAMPLE 2

Mr C. started a business 36 months ago with S10.000 capital. From a slow start, things appear to be heading in a positive direction, with steady sales increase. However, more capital is needed to fund charge customers and increase merchandise inventory.

Does PERFORMANCE justify this? Is the business capable of servicing these added overheads?

A.S.K. and get the answers!

STAGE 1 - INITIAL EVALUATION

ASK! provides a SUBJECTIVE EVALUATION tool—a questionnaire. The surveyed results are computed and graphically illustrated. The program will then advise you on what it believes your apparent strengths and weaknesses are. Interesting stuff!

STAGE 2 — REVIEW OF ACCOUNTING PRINCIPLES Numerous illustrations and spot tests are employed to ensure that each aspect is kept understandable and interesting.

STAGE 3 — RETURN ON INVESTMENT

Let the 6S ROI PYRAMID unravel the complex relationship between INCOME EARNING and ASSET MANAGEMENT. A fascinating analysis that helps you make a range of professional accounting adjustments to the figures to show the REAL PICTURE.

STAGE 4 — IN-DEPTH TREND ANALYSIS

A data-base is created. From this database a range of analyses is performed.

- OPERATING PERFORMANCE
- FINANCIAL POSITION, SHORT, MEDIUM, LONG TERMS, LIQUIDITY, PROFITABILITY.
- FINANCIAL MANAGEMENT, ASSET TURNOVER. ASSET DEPLOYMENT.
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A user of ASK can not only see where he has been more clearly, but also is able to **plan with** confidence where he is going!

This is a program for Apple II and Apple IIe computers.

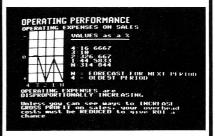
All inclusive cost for the six diskette set, manual and protective folder — \$295.

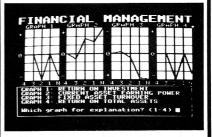


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